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IN COMMEMORATION OF THE WORK OF
THE EIGHT THOUSAND YALE MEN
WHO TOOK PART IN THE WORLD WAR
1914-1918

HOW AMERICA WENT TO WAR

· · ·

THE GIANT HAND

THE ROAD TO FRANCE I.

THE ROAD TO FRANCE II.

THE ARMIES OF INDUSTRY I.

THE ARMIES OF INDUSTRY II.

DEMOBILIZATION

HOW AMERICA WENT
TO WAR

AN ACCOUNT FROM OFFICIAL SOURCES OF
THE NATION'S WAR ACTIVITIES

1917-1920



Convoy at Sea

From a Painting by Frederick A. Pauls (see page 506)

R.C.

II.
THE TRANSPORTATION OF TROOPS
AND MILITARY SUPPLIES

1917-1918

..

BY BENEDICT CROWELL

THE ASSISTANT SECRETARY OF WAR AND
DIRECTOR OF MUNITIONS 1917-1920

AND ROBERT FORREST WILSON

FORMERLY CAPTAIN, UNITED STATES ARMY

*ILLUSTRATED WITH PHOTOGRAPHS FROM THE
COLLECTIONS OF THE WAR AND NAVY DEPARTMENTS*

NEW HAVEN

YALE UNIVERSITY PRESS

LONDON · HUMPHREY MILFORD · OXFORD UNIVERSITY PRESS

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PART THREE
THE SEA



Photo by W. Burden Stone

P. A. S. FRANKLIN

As chairman of the Shipping Control Committee, he was the supreme dictator of the movements of the American ocean cargo tonnage during the most crowded and effective days of the war

CHAPTER XXII

THE CATALOGUE OF THE TROOPSHIPS

THALATTA! Thalatta!" cried the soldiers of Xenophon's Ten Thousand as they double-quickened down those last desert parasangs—"The sea! The sea!" To the weary Greek hoplites the glint of the Black Sea meant respite from the inordinate toilsomeness of their memorable retreat. To him who has plodded faithfully through the *stathmoi*—some of them arid enough—of the present pilgrimage, there may perhaps be a like refreshment in his arrival, now, at the ocean's edge, where the sting of blown spindrift can reach his cheeks, and the clash of arms his ears.

There is no embarking on blue water, however, without ships. This the Government was constantly rediscovering throughout the movement of the two million to France. The War Department set forth upon its great troop-ferrying enterprise without any ships at all; at least, without any suitable ones. The slim, yachtlike vessels which composed our army transport fleet in early 1917 were totally unfit for service in the war zone. We tried the experiment of sending across one of them, the *McClellan*, in the summer of 1917. She made the voyage safely, but we were afraid to bring her back; and during the war she served as a floating refrigerator in one of our French ports. Because it would have been tempting providence to subject the *McClellan* to the fury of the Atlantic winter gales, we sold the vessel after the armistice to a French buyer for local coastwise service; and no doubt she is doing prosaic duty to-day, a safe ark for lunch-carrying French excursionists.

Ships, ships, and still more ships—the Government's quest

for them never ended. As if with the wand of magic, a prodigy of manipulation materialized the troop carriers even while the ever-swelling, never-ending column marched to the seaboard from the interior camps. The orders for overseas service had proceeded to the 16th and 18th Regiments and the other famous units which sailed in the first convoy and later made up our historic First Division in France, before the ships of that convoy were in government possession, or even designated. Somehow we always managed to keep abreast of the demand for troop tonnage. Cargo ships—they are another story. But of troopers we always had enough. When the armistice reversed the column, America had bridged the Atlantic with a mighty armada of troop transports; huge, capacious, swift ships, war-painted, businesslike, specialized by the art of the marine builder to be loaded with men as men were never loaded upon ships before.

In April, 1917, the army transport fleet included the troopships *Kilpatrick*, *Logan*, *Sheridan*, and *Thomas*, the cargo ships *Buford*, *Sumner*, and *Dix*, and some others of both sorts. The passenger ships also could carry cargo. Of these transports only the *Buford* was to brave the war zone in 1917 and 1918. She served faithfully in the cargo convoys and, after the armistice, was remodeled to aid in the return of the troops. The troopships, which had been in the Philippine and Panama runs, were large and commodious enough—4,000 to 5,000 gross tons each, with quarters for 1,600 or so officers and men—but for transatlantic service in the World War they were fatally deficient in two capital respects, speed and bunker capacity.

Of all defenses against the submarine—the fore and aft guns, camouflage, zigzagging, destroyer escort, even the convoy system itself—the vessel's own speed was the best. The fastest ships were virtually immune from attack. Only by the sheerest accident could a twenty-knot steamer be torpedoed. The Philippine transports were slow. It was only after considerable hesitation that the War Department consented, in 1918, to permit the embarkation of American troops in Brit-

ish vessels as slow as eleven and a half knots. The Philippine ships could make but ten.

Moreover, the shortage of coal was one of Europe's most acute embarrassments. Certainly England had no coal to spare for the bunkers of our transports. Therefore we could put into the A. E. F. supply service neither cargo transport nor troopship that could not carry sufficient coal for the round voyage. That consideration, too, ruled out the Philippine transports, not one of which could stow such an amount of fuel. When the first expeditionary force was assembling, then, the Government was automatically forced to seek its transports from the peaceful ocean trades.

Now, it happened that, late in the autumn of 1916, the Government, to anticipate the quite possible contingency of war, had begun building up a reserve of sodium nitrate for the manufacture of powder and high explosives. To that end, the Quartermaster General occasionally dispatched an army transport to Iquique or Antofagasta, Chile, for a cargo of nitrates. The *Kilpatrick*, *Sumner*, and *Buford* all made such trips. The Army Transport Service, which had managed military ocean travel during the Spanish War and for some years thereafter, then only to disappear, was re-created to operate the nitrate ships; and Colonel J. M. Carson, Depot Quartermaster at New York and, later, Deputy Quartermaster General of the A. E. F., assumed the additional title of Chief of the Army Transport Service. It was the Army Transport Service which collected the ships for the first transatlantic convoy and fitted them for the work.

In the selection of this earliest makeshift transport fleet, the Government profited by the experience of some of the most practical shipping men in the United States. The decision to send troops to France was taken suddenly in early May, 1917, and the organizations named for the first expedition were ordered to sail within a month. Before this we had seized the German passenger ships; but a survey had already disclosed the extent of the damage done to them by their interned crews; and, the Navy not having as yet wrought its miracle of re-

pairing, the Army had no reason to count on the use of many of them within, at best, a year. There was nothing to do but take from the merchant tonnage such ships as would serve until we could procure better.

Among the experts who responded to the Government's appeal were Mr. P. A. S. Franklin, president of the International Mercantile Marine Company, and Mr. H. H. Raymond, president of the Clyde Line Steamship Company, both later to become members of the important Shipping Control Committee. These men and others went over the registry of American shipping to determine what vessels were suitable. They picked out boats which were of sufficient speed and bunker capacity, and which, being either in port or not far out at sea, were immediately available. From the whole list of those nominated, Colonel Carson in New York selected the following fourteen vessels:

<i>Passenger</i>	<i>Cargo</i>
<i>Finland</i>	<i>Momus</i>
<i>H. R. Mallory</i>	<i>Antilles</i>
<i>Lenape</i>	<i>El Occidente</i>
<i>Tenadores</i>	<i>Montanan</i>
<i>Pastores</i>	<i>Dakotan</i>
<i>Havana</i>	<i>Edward Luckenbach</i>
<i>Saratoga</i>	<i>San Jacinto</i>

Finland.—The largest boat of the convoy, 12,000 gross tons, 580 feet long; speed, 13½ knots (rather slow for safety). Property of the International Mercantile Marine Company (Red Star Line). Regularly engaged in transatlantic passenger service between New York and English ports. When designated as a transport she had just left England westbound. She was the last of the fourteen to reach New York.

Pastores and *Tenadores*.—United Fruit liners, carrying tourists and cargoes of bananas between Caribbean ports and New York. Sister ships, 7,800 gross tons, 480 feet long, speed

about $15\frac{1}{2}$ knots. Built for tropical service; additional deck construction required to make them comfortable in cold weather.

Saratoga and *Havana*.—Sister ships, 6,400 gross tons, 413 feet long, 16 knots. Property of New York & Cuba Mail S. S. Company (Ward Line), engaged in passenger and cargo carriage between New York and Havana.

Lenape.—Clyde Line coastwise passenger ship, 5,200 gross tons, 398 feet long, 14 knots.

H. R. Mallory.—Operated by Mallory S. S. Company, carrying passengers and freight between New Orleans and New York. An oil burner, 6,000 gross tons, 440 feet long, 15 knots an hour.

Momus, *Antilles*, and *El Occidente*.—Property of Southern Pacific Company, carrying cargo and passengers between New York and the terminal of the Southern Pacific Railroad at New Orleans. *Momus* and *Antilles* each 6,800 gross tons, 410 feet long; speed, 15 knots an hour. *El Occidente*, 1,000 tons smaller; speed, $15\frac{1}{2}$ knots an hour.

Dakotan and *Montanan*.—Property of American Hawaiian S. S. Company, in the Hawaiian sugar trade *via* Panama. Oil burners, 6,600 gross tons, 416 feet long, making 12 knots an hour.

Edward Luckenbach.—Property of Luckenbach Company, Inc. Oil-burning cargo vessel, 8,000 gross tons, $13\frac{1}{2}$ knots.

San Jacinto.—Property of Mallory S. S. Company. From the Atlantic and Gulf coastwise trade; 6,000 tons, 380 feet long, 14 knots an hour.

As rapidly as these ships reached port and discharged their cargoes, the Army chartered them. The *Tenadores*, *Mallory*, and *Havana* went under government charter on May 24, 1917. On the 26th the owners turned over the *Antilles*. On May 28 the *San Jacinto* joined the fleet. Next day the *Dakotan* was ready. On May 30 the Army acquired the *Pastores* and *El Occidente*. The *Edward Luckenbach* had been discharging cargo in Philadelphia. The ship arrived in New York May 31 and went under army charter. On June 1 the fleet

grew by the addition of the *Montanan*, *Momus*, and *Lenape*. The *Saratoga* had discharged her last commercial cargo and was turned over to the Government early in the morning of June 2; and at noon that day the owners surrendered the *Finland*, which had come into port a few hours earlier.

The combined fleet could accommodate over 15,000 military passengers and could load, including the cargo capacity of the troopships, about 40,000 tons of freight.

Most of the ships needed extensive overhauling to make them suitable for transport service. To turn the passenger ships into troop carriers, the second- and third-class accommodations had to be ripped out and replaced with standee berths. The cooking and toilet facilities had to be greatly expanded. Four of the cargo vessels were selected to be animal ships; in these the Army Transport Service, which had complete charge of the refitting job, had to build ramps and stalls. Moreover, the refitters had to build deck gun platforms upon every ship except the *Finland*, which, coming from war-zone service, was already armed; and in some instances they had to strengthen the decks below the platforms, before sending the ships to the Brooklyn Navy Yard for their guns. Then stores and forage for man and beast had to be loaded aboard and crews provided, of which every man must be of proved loyalty to the United States. The whole work had to be completed within three weeks. To accomplish it the Army Transport Service possessed a working force entirely inexperienced.

Long before any troops reached New York for embarkation on these vessels, the horses and mules began arriving—suitable animals which the Quartermaster Corps was picking up in all sections of the United States, as well as a number of thoroughbreds owned by officers of the prospective overseas expedition or by those who had crossed with General Pershing. The Depot Quartermaster at New York rented a section of New Jersey stockyards for their accommodation, and almost before he knew it this temporary corral had filled up with some 3,000 animals, all of them billed for passage on the first convoy.

The embarkation of the First Division was far from being a smooth operation. As yet there was no organized Port of Embarkation, no Embarkation Service, no evolved system that handled men with the precision of a machine. The old A. T. S. in New York struggled ahead without precedents or experience. Its best-laid plans failed to prevent confusion. For one thing, the embarking regiments neglected the detail of sending on ahead to the Army Transport Service the lists of their baggage, and the baggage trains arrived unheralded. Meanwhile the Service was trying to load general cargo into the transports without any definite notion of what cargo should be loaded. The regimental and divisional baggage entered the situation, and room had to be made for it. In more than one instance cargo went into a transport, came out, and went back, so that it received a triple handling.

The troops began arriving at Hoboken on June 7; they were all there by June 9. But the convoy was still far from ready. The Transport Service had devised a system whereby it hoped to embark all the troops on the night of June 9-10 and have the ships down the bay before commuters began crowding the ferries next morning. As it turned out, it took, not a few hours, but, alas, several days to embark the four regiments and the accompanying troops.

But the travel-weary soldiers were all ordered to the piers on the evening of June 9, in pursuance of the original plan. There they stood, in ranks, hour after hour, awaiting their turns to embark. Two officers and a force of green clerks, in a waiting room on one of the piers, attempted to compile all the passenger lists that night. When dawn came they had no more than made a good beginning. They worked continuously day and night until the lists were finally complete; and when exhaustion came upon them they flung themselves down on tables and benches and slept where they were. On that first night, hand trucks and electric trucks threaded their way through lanes of men. Auto trucks and horse-drawn vehicles added to the confusion. Outside in the slips the water was jammed with scows and lighters and whistling tugs. Collisions

were frequent. The night air rang with shouts and curses. Freight and baggage and a few troops were crawling aboard. The troops found the transports still swarming with repair men who were trying to put the final touches to the refitting before the vessels moved away from the piers.

Only one boat, the *Finland*, was ready for sea by morning. The worn thousands still on the piers could not be held there longer: yet there was no suitable place to send them to—no embarkation camps, nor even any available barracks. There was nothing to do but order the soldiers back to their trains, which were thereupon sidetracked in a particularly noisome part of the Jersey meadows, where glue factories and reduction plants loaded the air with unsavory odors. In cars that became ovens under the June sun, these grimy, haggard, sweating men tried to sleep, only to awake half sick from lack of exercise and of refreshing baths; also from trying to live on dry emergency rations in a vicinity that made even appetizing food repugnant. On June 14 the convoy finally sailed—all except the four animal ships, which were to follow later. It left behind it a shore organization glad that the job was accomplished at last. And on the ships were thousands of doughboys to whom even a possible encounter with a submarine would be welcomed as a change from the experience which they had just undergone.

This confusion was never to be repeated. By the time the ships returned to New York for their second load, the Army Transport Service had perfected a system which enabled troops to go aboard their ships as soon as they reached the piers.

Of the vessels of that first convoy, three, the *Antilles*, the *Tenadores*, and the *Montanan*, ended their careers on the bottom of the sea. The *Antilles* was first to go—torpedoed and sunk October 17, 1917. The *Montanan* was torpedoed on August 16, 1918, off the French coast. The *Tenadores* ran on the shoals in the Bay of Biscay on December 30, 1918, after the armistice, and was a total loss. The *Edward Luckenbach* carried army freight until the armistice, after which it became a troopship in the home movement. On August 6, 1919, the

Luckenbach was turned back to her owners. The *Dakotan* also became, after the armistice, a converted troop transport. The *Momus* was restored to her owners in early 1918. The *Havana* made only the one trip as a troop carrier. After her return in July she went to the shipyard for conversion, and emerged a few months later as the U. S. Navy hospital ship *Comfort*. The *Henry R. Mallory* continued in the transport service until after demobilization was complete. The *San Jacinto* was restored to her ownership shortly after the armistice. The *Lenape* continued to be a troopship throughout the period of hostilities, but went back to the Clyde Line in February, 1919. The Army gave up the *Saratoga*, sister of the *Havana*, in September, 1917. *El Occidente* hoisted her Southern Pacific flag in March, 1919. The *Pastores* continued in the troop fleet until demobilization was complete, as did also the *Finland*.

The seven troopships of that historic first convoy were the nucleus of an army passenger fleet which, in a surprisingly brief time, waxed great. The Navy's extraordinary exploit in using the electric welding torch to repair the broken machinery of the former German ships was the chief contributing factor to the swift growth of our troop-carrying tonnage, but by no means the only one. Appendix F, the list of cargo and troop transports used by the Army during the war, contains the names of many troop carriers other than the original seven and the score of ex-German liners.

On October 15, 1917, the United States Shipping Board requisitioned all American merchant vessels above certain minimum sizes, including all passenger ships of 2,500 gross tons or more. This brought into the government service by charter 444 vessels of all sorts, a number of them ocean passenger ships. As the Embarkation Service found need of more passenger tonnage, such of these vessels as were suitable were from time to time added to the troop fleet.

When America entered the war the ships of the Red Star Line, a concern owned and operated by the International Mercantile Marine Company, were flying the American flag, although the White Star Line, also subsidiary to the Interna-

tional Mercantile Marine Company, remained in the British registry. The Red Star ships, then, came under the requisition order. The *Finland* and *Kroonland* were both Red Star liners. The Shipping Board allotted the *Kroonland* to the transport fleet in February, 1918. In April and May, 1918, three ships of the American Line, another International Mercantile Marine subsidiary, joined the troop fleet—the *Harrisburg* (formerly called the *Philadelphia* in commercial service), the *Louisville*, and the *Plattsburg* (which was theretofore the well-known American liner *New York*).

Two other vessels requisitioned by the Shipping Board were the *Great Northern* and the *Northern Pacific*. These were new boats, built by the Cramp shipyard at Philadelphia for the Great Northern S. S. Company, a corporation closely related financially to the Great Northern Railroad. The company had begun to operate them coastwise from the Great Northern terminal at Seattle, Washington, to San Diego, California, with side trips to Honolulu. In March, 1918, the Shipping Board turned these two vessels over to the War Department. They proved to be the best ships in the transport service—better even than the German ships, built primarily for troop transportation. Not only were the *Northern Pacific* and the *Great Northern* extremely fast, making twenty and twenty-one knots an hour respectively, but they were oil burners, and as such easily bunkered for the round voyage. These two ships held the records for speed in the turn-around between the United States and France. They were identical in size, 6,000 deadweight tons, 525 feet long, each with capacity for over 3,000 troops.

The *Great Northern* and the *Northern Pacific* proved so serviceable that the Embarkation Service approached the Cramp Shipbuilding Company with a project to build four more just like them. The builders figured that the proposed ships would cost \$4,000,000 apiece; and the Embarkation Service was ready to snap up such a contract. Then the Cramps took second thought and decided that they were too crowded with other government work to attempt the job. In the face

of the four-million-dollar cost estimate, the War Department held an option to buy the *Great Northern* and *Northern Pacific* for \$2,000,000 apiece. Naturally there was no hesitation in Washington about closing this option; the Government acquired the two boats outright, and it owns them to-day. Certain private ship operators have since approached the Transportation Service with an offer to buy the two vessels for double the price paid for them.

Oil-burning troopships were so successful in the transport service that the War Department sought others. Among the vessels requisitioned by the Shipping Board were several oil-burning passenger carriers belonging to the Matson Navigation Company, which operated them on the Pacific Ocean. Early in 1918 three of the Matson boats, the *Matsonia*, *Maui*, and *Wilhelmina*, all three of them fine passenger vessels, were added to the army fleet. The *Matsonia* and *Maui* were of about 9,000 and 10,000 gross tons respectively, and each could carry well upwards of 3,000 troops. The *Wilhelmina*, smaller and slower, was nevertheless a serviceable troop carrier.

In the summer of 1917 the Shipping Board commandeered outright, and acquired the title to, all private shipbuilding projects within the United States. The commandeering order covered all ships launched, but not commissioned, and all hulls on the stocks. Two vessels which came to the Government in this manner were the passenger ships *Orizaba* and *Oriente*. In 1917 they were being built in Philadelphia for the Ward Line. The Shipping Board modified their interior construction plans to specialize them for military service and in April and May, 1918, delivered them to the troop fleet. The *Oriente* was renamed the *Siboney*. The two boats proved to be among the best in the trooping service. They were oil burners, and they averaged better than seventeen knots. They were the only boats in the troop-transport fleet owned by the United States Shipping Board.

The commandeering of the Dutch tonnage in the early spring of 1918 added three ships to our fleet of troop transports—the *Koningen der Nederlanden*, the *Rijndam*, and the

Zeelandia. From the Atlantic Transport Company, a subsidiary of the International Mercantile Marine Company, the Shipping Board requisitioned the *Manchuria* and the *Mongolia*, sister ships of nearly 14,000 gross tons each; and these were turned over to the Army in January and February, 1918. They were among our largest transports; each carried about 5,000 troops.

In all, there were forty-one passenger vessels in the troop-transport fleet when the armistice was signed. Four others had engaged in the service, but had been given up by the Army or sunk by the enemy. Eighteen ships of the fleet, as it existed on November 11, 1918, derived from German ownership. The rest were acquired by requisition and charter or by outright purchase. The convoy which sailed away on June 14, 1917, could accommodate about 15,000 troops. When the armistice was signed the troop-carrying fleet had capacity for approximately 150,000 officers and men.

It must not be supposed that this fleet was regarded by the Embarkation Service as a finished creation. By November, 1918, the Army had brought into its own service about all the suitable passenger boats that the world could supply. Any further increments had to come from new construction. The United States Shipping Board had laid down a program which contemplated nothing less than the doubling of our troop-carrying tonnage before the autumn of 1919.

The earliest efforts of the Shipping Board had been directed single-mindedly to the production of cargo ships. Shortly after the overseas troop movement swelled to great volume in the spring of 1918, the Embarkation Service convinced the Shipping Board that it would have to take up the construction of troop carriers. It was becoming evident that, in following out the expanded man-power program for the A. E. F., the Army would face in 1919 a severe shortage in passenger boats. The Shipping Board accordingly mapped out a great project for the construction of troopships and secured a vast appropriation of money from Congress with which to prosecute the work.

The projected ships were of two rigidly standardized types,

one the design of the New York Shipbuilding Company at its Camden yards, the other a Hog Island design. Transports of the Camden type were each to be 535 feet long, have 18-knots-an-hour speed, and be equipped to carry 2,500 troops besides a considerable amount of cargo. The plan was to build twenty-nine such vessels—nineteen at Camden, eight at the Baltimore yards of the Bethlehem Ship Corporation, and the other two at the Newport News Shipbuilding Company's yards on Hampton Roads—five of the twenty-nine to be delivered before the end of August, 1919. The transports of the other and more numerous class came to be known as the Hog Island Type-B vessels. The original plan at Hog Island was to build on that establishment's fifty shipways cargo vessels only, all of them of a single type—a 7,500-ton, 11½-knot ship, so completely standardized that it would be impossible to tell two of them apart at any distance. This was the Hog Island Type-A ship. When the Hog Island designers in the spring of 1918 produced the design for an army troopship, they called it their Type-B ship. It was a combination 8,000-ton troop and cargo carrier with capacity for 2,000 troops and a large amount of freight besides. Its projected speed was 15 knots an hour. The Emergency Fleet Corporation planned to produce seventy of them by August 31, 1919.

The Hog Island specifications, to permit the greatest possible speed in production, eliminated useless curves and refinements of construction. They also provided for ships alike in contour at both ends, so that from a distance a submarine commander could not tell bow from stern or readily discover in which direction the ship was moving.

Here was a combined project, then, to put into the Army's fleet by the end of August, 1919, a total of seventy-five new troopships with carrying capacity for over 150,000 men—possessing in themselves greater capacity than that of the American troop fleet at any time before the armistice. Yet it is unlikely that any such amount of tonnage would have come into commission within the time specified, even if the war had continued and shipbuilding had remained keyed up to war-time

speed. The armistice came before any yard had laid a keel in this project. Since then three Camden-type vessels—the *Wenatchee*, the *Sea Girt*, and the *Koda*—have come from the ways and gone into service, but not as army transports. They are passenger vessels in the South American trade. The Army considered the Type-B Hog Island boats to be admirably suited to its peace-time requirements, and it ordered eleven of them for its permanent fleet, canceling the contracts for the construction of the other fifty-nine. Two of these vessels are now (October, 1920) in service.

The American troop fleet, impressive as it was at the time of the armistice, was not of sufficient capacity to transport half of the A. E. F. to France; which is another way of saying that more than half the Americans who saw service in France crossed the ocean in foreign vessels. These were principally of British registry. The procurement of so many alien passenger ships for our transatlantic service was the signal achievement of the Embarkation Service.

The episode of the British passenger tonnage may be said to have begun in the autumn of 1917. At that time our own troopships were few, whereas at the training camps there was a rapidly growing force of men almost prepared for active field service. The American passenger-ship tonnage in operation and in sight was going to be, for many months to come, insufficient to ferry this force to France as rapidly as it could make ready to sail.

In November, 1917, the American Chief of Embarkation asked the British Ministry of Shipping to assign to our transport service the great White Star liner *Olympic*, a vessel as large as or larger than the ill-fated *Titanic* of the same line. During the early years of the war in Europe, the *Olympic* carried Canadian soldiers to France; but by the autumn of 1917 Canada had sent the greater part of her men overseas, and her transport movement had dwindled. Consequently the *Olympic*, one of the costliest vessels in the world, was laid up in an English port, the British Government not caring to risk such a valuable property at sea except on the most urgent and vital

business. The British authorities showed some natural hesitation about putting the *Olympic* back on a regular run through the war zone; but on the assurance of the Chief of Embarkation that the American Government would assume the full risk (although the White Star Company was to operate her), the Admiralty consented. The *Olympic* made her first trip with American troops in December, 1917.

One characteristic of the reorganized Embarkation Service in early 1918 was its emphatic insistence upon more ships in both the American cargo and troop services. Surveying the possible world resources for building up our troop fleet, our authorities located in England the *Aquitania* and the *Mauretania*, both out of commission. These were two of the finest passenger ships in the world; in fact, England thought so much of the two vessels that she had never exposed them to the hazards of transport service. When the British battle casualties in France first became heavy, the *Aquitania* and the *Mauretania* were fitted up as hospital ships and put on the cross-Channel run to bring home the English sick and wounded. Then, when Germany began torpedoing hospital ships in order to force England to escort them with destroyers, the *Aquitania* and the *Mauretania* were withdrawn from the run and kept in port.

General Hines, the Chief of Embarkation, asked Mr. E. M. Raeburne, the American representative of the British Ministry of Shipping, for these two vessels; and the British Ministry granted the request on the terms under which the *Olympic* had become an American trooper—namely, operation by the British, but full assumption of risk by the United States Government. The vessels began operating between New York and Liverpool early in January, 1918. Together with the *Olympic* they gave us an additional monthly carrying capacity of 15,000 troops.

It is a noteworthy fact that, although under the agreement the *Olympic*, *Mauretania*, and *Aquitania* were not permitted to sell eastbound passages to private travelers, the passenger accommodations being reserved exclusively for American

troops, the owners were permitted to use the passenger space as they chose on the voyages from England to the United States. Also, the British Government retained full control of the cargo holds in these ships. It could at any time, and often did, cut down the passenger accommodations to make more room for cargo needed in England.

From the very beginning of the World War in 1914, some of the smaller and less valuable Cunarders and other British liners had maintained a plucky, if slender, commercial service across the Atlantic. The *Adriatic* and others continued to make occasional runs to New York and return. On these the Embarkation Service, in the early part of 1918, secured certain concessions of passenger space, although it was unable to obtain full possession of the accommodations. This auxiliary service was sporadic and unsatisfactory, in that our embarkation officers never knew in advance exactly how many men could sail on any voyage. Yet the regular commercial boats gave us a measure of capacity beyond that of our own troop carriers plus the three British vessels operated by special arrangement.

The successful use of commercial vessels opened up, both to our own authorities and to the British, possibilities of increasing our troop-carrying fleet beyond anything originally contemplated. As early as January, 1918, the Allies were aware of the seriousness of the military campaign which Germany purposed to launch in the early spring. Russia had collapsed; a great part of the German army on the Russian front was moving west and preparing for the drive by which Germany expected to win the war. The German Government made no attempt to conceal its purpose; it even advertised it to the world; and the commanders of the associated armies did not discount the gravity of the situation, though for many months they had been more than holding their own. General Pershing, always an advocate of an early effort for man-power on our part, in January strengthened his appeals for American troops. By that time, too, the Selective Service Law had begun to have its effect, and the training camps were nearly ready to grad-

uate soldiers in numbers far exceeding the unaided facilities of our overseas transport.

In February, 1918, an important international conference in the office of the Chief of Embarkation in Washington considered the matter of greater coöperation between America and the Allies in the shipment of military and civilian supplies to Europe. To the conference came Sir Grahme Thompson and General Hutchinson from England, bringing with them the definite notion that we might be able to use more troopships than we had. Before leaving home they had made a search and found some forty British vessels available for us if we needed them. Most of the forty were cargo vessels, but they could be converted into troop carriers.

Query—how slow a vessel should we be willing to accept as a troop carrier? Some of the British freighters named were quite out of the question because of their lack of speed. To be frank about it, the War Department did not relish putting American troops on ships slower than fourteen knots an hour; even that speed was no sure protection against submarines. Yet the emergency was acute. We consented to scale down our standard to admit British ships as slow as eleven and a half knots an hour. The two Englishmen agreed to go home and rout out from the trades of the world every obtainable passenger and convertible freight steamer which could make that speed or better. They had, incidentally, no great faith in our ability to provide passengers for so many vessels.

“How many troops can you get?” Sir Grahme Thompson bluntly asked; and General Hines made the reply which was to become the Embarkation Service’s policy: “We will load every ship you put in our ports.” This promise seemed rash. No one could then say definitely at what rate we could make soldiers ready for foreign service. The British themselves could not estimate closely what tonnage they could supply. Yet the record stands: the British played their part to the utmost, and the Embarkation Service always kept faith with its pledge. Not a British ship left our shores unfilled until we deliberately halted the movement to France.

There was another conference with these gentlemen in New York, just before they sailed for England. It was now fully understood that the British were to supply additional troop-ships; the two questions were, how many ships England could furnish, and how many men the Port of New York could embark. General Hutchinson, who had looked over the port facilities, expressed the opinion that New York would be unable to cross the two-hundred-thousand mark in any month. General Hines, on the contrary, voiced his belief that New York would reach 250,000 embarkations a month.

After the British officials had gone, General Hines and General Shanks, the Commander of the Port of Embarkation, laid the plans which resulted, in the spring of 1918, in the great increase in embarkation-camp space at New York. There began at once the construction which was to give Camp Mills capacity for 40,000 overseas troops; and the War Department ceded to the Port of Embarkation a part of Camp Upton on Long Island. This space enabled the Port to reach its high records in the embarkation of troops.

The German drive began, made tremendous progress. General Pershing accepted the offer of the British to transport the infantry and machine gun troops of six American divisions, and the Admiralty began throwing ships into the transatlantic service. In all, 188 vessels, either British-owned or under British control, made one or more trips from New York to England carrying American soldiers. Many of these vessels had been cargo carriers, and much of the work of refitting them with passenger accommodations was done at New York under the direction of the Port of Embarkation. The British owners operated these ships and the British Navy convoyed them, but we made every one of the boats come up to American army standards of health and safety. The Port of Embarkation spent \$4,000,000 for life-saving equipment alone, either to supplement that already carried on British ships or to replace equipment which our officers condemned. The new equipment was sold to the British ship owners at cost.

The Ministry of Shipping combed the seven seas to find

suitable vessels for the American troop service. England brought ships from Africa, from India, from the Antipodes. By the spring of 1918 the Gallipoli expedition had come to an end, and the withdrawal of the British troops had released numerous transports from the line of communications between England and Macedonia. England seized four Russian vessels and placed them in the transatlantic run. She obtained passenger tonnage from Italy, Japan, and other Allies.

To illustrate the extent to which the British search for passenger ships went: The Ministry of Shipping sent to New York a Portuguese steamer called the *Tesmontes*. While she lay in port in New York the *Tesmontes* did not escape criticism; but she was rated fast enough, and technically she came up to specifications otherwise. She was allowed to sail with troops in a British convoy. One trip was enough for us. The officers and crew of the *Tesmontes* were Portuguese; her passengers and the convoy commander spoke English; and—there was no liaison aboard. The Portuguese mariners seemed unable to comprehend the rules of convoy sailing. The ship was continually dropping back and losing contact with her convoy. The Portuguese firemen could not keep up steam, and on one occasion it became necessary to detail some of our troops to go down and feed her fires. She managed to regain the convoy in time to receive the benefits of the destroyer escort through the submarine zone. But when the other ships turned into the English harbor, the *Tesmontes* proceeded to take a short and unescorted voyage on her own account: she selected for her own little *paseo* a strip of water so thickly sown with mines that it seemed impossible for even a tugboat to get through without being blown to oblivion. Heaven was kind to the *Tesmontes*. After rambling aimlessly through the mine field, while the shore wireless sputtered futile directions which her Portuguese commander could not read, she chose a course on her own hook and returned safely.

In January, 1918, the Embarkation Service began urging the French Government to supply troopships to the United States. France sent the *Lutetia*, *La France*, the *Patria*, and

the *Sobral*, all fine vessels. They traveled in the United States troop convoys. The *Sobral* was a former enemy ship, obtained by France from Brazil, which country had become a co-belligerent shortly after the American declaration of war.

In all, the British ships and Allied tonnage under British control transported fifty per cent of the A. E. F. to France; troopers under the American flag carried forty-five per cent; and five per cent went in Italian and French ships routed in the American convoys.

In transportation efficiency the American-flag troopships outdid any other ships placed at our disposal, and by a wide margin. For each 1,000 deadweight tons in the American troop fleet, we transported to France 7.19 men every day. The British ships operating in British convoys averaged 3.76 men taken to France each day for each 1,000 tons deadweight. We loaded far more men in a given space than the British attempted, and we cut down the time of the round-trip voyage—the turn-around, as it was called—far below the British average. The average turn-around of a British ship in the American troop service was 84.4 days, or nearly three months. The American turn-around was 36.3 days, or slightly more than one month.

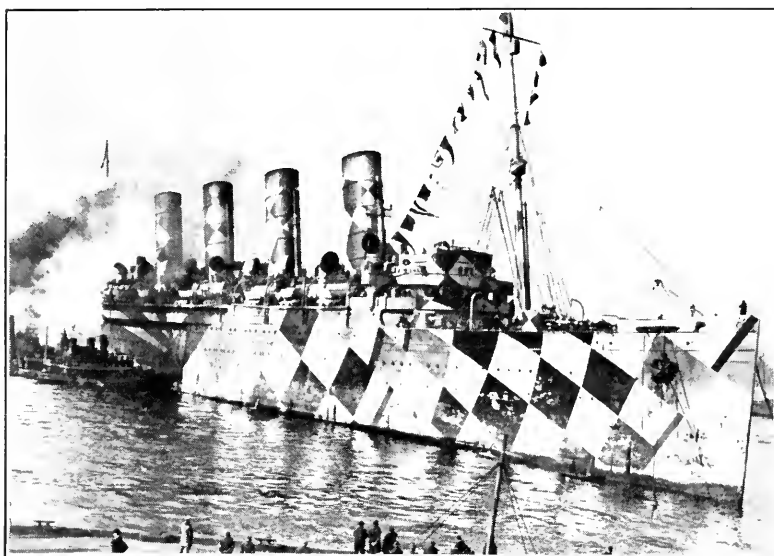


Photo by N. Y. Times

MAURETANIA LEAVING NEW YORK WITH TROOPS

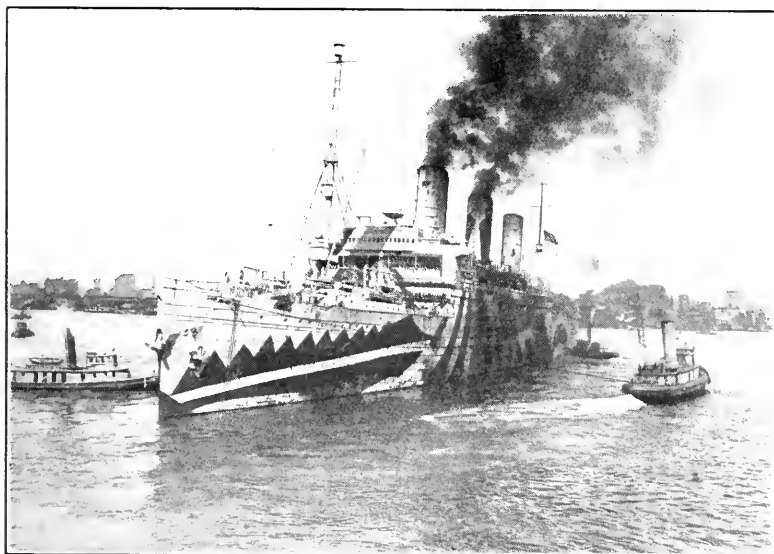
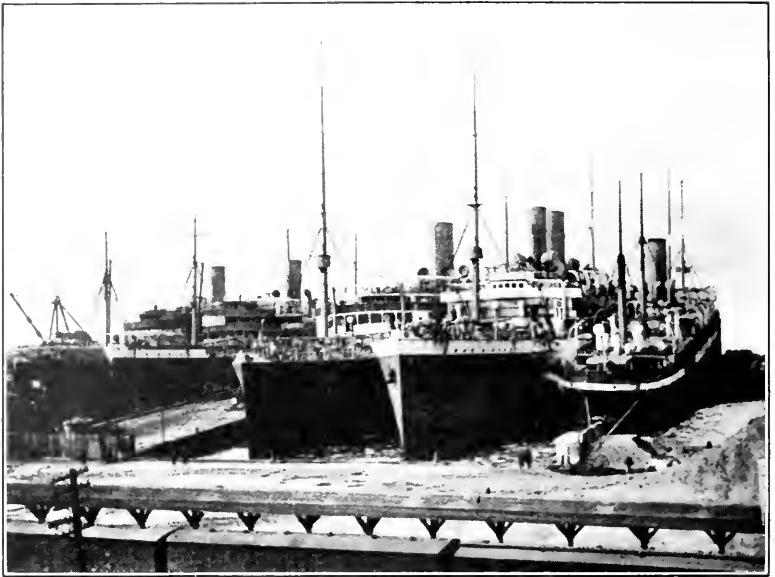


Photo by Signal Corps

DEPARTURE OF LEVIATHAN, AUGUST 3, 1918



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**GERMAN PASSENGER AND CARGO SHIPS INTERNED
IN NORTH RIVER AT 135TH STREET, NEW YORK**



Photo by International Film Service

**SEIZURE OF AUSTRIAN CARGO VESSEL *ERAY* BY
UNITED STATES**

CHAPTER XXIII

A LITTLE JOB OF MARINE REPAIRS

ON the 6th day of April, 1917, there lay in various American harbors 104 ships of German ownership. They were mostly large passenger ships of the North German Lloyd and Hamburg-American lines. Among them were some of the finest and fastest vessels that had ever taken the water. In tonnage they constituted more than a quarter of the total German merchant marine, counting every German ship of 100 tons or more in displacement; in quality they were the very flower of the most painstakingly created commercial fleet the world had ever known.

The German merchant marine was no more a natural growth than the Germans were traditionally a seafaring people. There are plenty of Germans alive to-day who can remember when press-gang crews went through the streets of Berlin taking clerks and artisans for sailors. Gradually, by coercion, by subsidies, and by close financial relations established between the Imperial Government and the principal German shipping companies, the same plodding method and organization that had accomplished such wonders in other directions built up German sea-power until, in 1914, it was outweighed only by that of England herself.

This same merchant marine, so puissant in extending the spread of German commerce and *Kultur*, was to prove a sharp embarrassment to Germany when she saw fit to aid her world conquest by force of arms. When she declared war against France, her merchant ships were scattered to the uttermost corners of the earth. The entrance of Great Britain as a belligerent on a day in August, 1914, caused these ships, wherever

they might be, to scurry to the nearest neutral haven. There was scarcely a neutral harbor or half-sheltered roadstead anywhere in the world that did not give anchorage to at least one of these interned craft. As, one after another, many of the original neutrals declared war against Germany, the German ships fell into their hands. American harbors sheltered far more of the interned tonnage than the ports of any other nation—a fact which was to be of immense importance to our overseas transport system later on. By the irony of events, Germany's own merchant marine was to become a potent element in her undoing.

From smoky harbors of New England to the tropical Philippines and coral atolls of the South Sea, these ships were scattered in our ports, and for nearly three years they were secure under the protection of the American flag. Trig and smart when they had come to their permanent anchorages, gradually they became grimed and rusty from long disuse. Some of them, which lay in shallow waters, had literally been fastened to the bottom by barnacles and other sea growths. The Gulf cities interned their quotas. There were some at either entrance of the Panama Canal; others had sought sanctuary in Porto Rico or in the harbors of the Virgin Islands, once Danish, but destined to become part of the United States before the war reached its end. Our principal Pacific coast ports sheltered a few; and numbers were in the harbors of the Philippine and Hawaiian Islands and at Samoa. In bulk, these ships aggregated over 600,000 gross tons.

At the Hamburg-American and North German Lloyd piers at Hoboken, New Jersey, were moored the pick of Germany's overseas merchantmen. Here was the mighty *Vaterland*, of 54,000 gross tons, the largest passenger vessel afloat save only the *Imperator*, another German vessel which, fortunately for the peace of mind of her owners, was in a German port when war broke out. In all the North Atlantic ports of the United States, but principally in New York, were interned passenger vessels of nearly 300,000 tons in the aggregate; and thirteen of them exceeded 10,000 gross tons each.

Some of the German ships had reached the supposedly friendly haven of American waters only after stirring adventures. The *Kronprinzessin Cecile* was far at sea, outbound from New York, early in August, 1914, when she received wireless orders to put about and make a race for shelter. She had on board a large shipment of gold bullion, totaling nearly \$30,000,000 in value. The *Kronprinzessin Cecile*, her luxurious cabins filled with frightened and indignant passengers, put about with her gold and entered a Maine harbor just when the fashionable North Shore season was at its height, giving the summer visitors their first thrill of the war. Later, the *Cecile* threaded her way down the coast to Boston, keeping well within the three-mile limit to which our national jurisdiction extends; and at Boston she was when she fell into American hands, after America became the declared enemy of Germany.

In the harbor at Guam was interned the German raider *Cormorant*. The *Cormorant* was formerly the *S. S. Ryland*, a Russian. In Japanese waters the *Ryland* fell victim to a German raider, which placed a German crew aboard her, named her the *Cormorant*, and sent her out on a career of terror against Allied shipping in the Pacific. Eventually the pursuing British and Japanese cruisers cornered her, and on December 15, 1914, she ran into harbor at Guam and found safe internment. When the time came for her to be taken by an enemy, the *Cormorant* proved to be one of the few German naval vessels which upheld the best traditions of the sea. On the morning of April 7, 1917, when the United States authorities at Guam were on their way to seize the *Cormorant* as a war prize, her German crew blew her up, and she sank to the bottom of the harbor a useless wreck. Her crew got away safely in boats and remained prisoners of war at Guam during the rest of hostilities.

Still another German navy vessel, the *Kronprinz Wilhelm*, fell into our hands as a prize. Although operated by the North German Lloyd Company as a passenger vessel, the *Kronprinz Wilhelm* was in reality an auxiliary cruiser, and was so rated.

She was interned at Philadelphia, where a crew sent by the Philadelphia Navy Yard seized her on April 6, 1917.

When war was known to be inevitable, the eyes of the nation naturally turned to the interned German vessels as legitimate booty soon to fall into our hands. Here at hand was tonnage which would give the United States immediately an ocean transport equipment of no mean proportions. Yet there were widespread suspicions that the ships might be damaged or destroyed by their interned crews before the American authorities appeared to take them over. Under the terms of international law, the crews had been permitted to live aboard their ships. The concentrations of German interned tonnage in our eastern harbors—in effect, so many German villages and towns in our midst and in direct wireless touch with the Imperial Government—had become troublesome foci of sabotage directed against American industries which were making munitions for the Allies; and from more than one outrage the clues led to the interned ships. If the active German agents in this country had not hesitated to wreck trains, destroy bridges, and blow up factories to prevent supplies from reaching their European enemies, why should they hesitate to destroy their own ships to keep them from falling into the hands of a prospective enemy? Nevertheless, the United States kept within the metes of law. No attempt was made to seize the ships and expel their dangerous crews until there was the plain legal right to do so—a right not ours until the President had signed the resolution which declared war to exist between the United States and Germany. On the morning of April 6, 1917, the stage was set for the seizure of this great marine. At various seaside military posts, boarding parties awaited only the word from Washington before beginning their work. At their berths lay the German ships, to all outward appearances unchanged. The half-anticipated scuttling of them, at any rate, had not taken place.

Of the one hundred and four ships, twenty were passenger vessels. The places of internment of these twenty, their names, and the essential items of their description were as follows:

At Boston :

The *Amerika*, a Hamburg-American liner built at Belfast, Scotland, in 1905; 670 feet long; tonnage, 23,000 gross; speed, 17.5 knots.

The *Cincinnati*, a Hamburg-American liner built at Danzig in 1909; 582 feet in length; 16,000 gross tons; maximum speed, 15 knots an hour.

The *Kronprinzessin Cecile*, a North German Lloyd liner built in Germany in 1906; 706 feet in length; 25,000 gross tons; maximum speed, 23.5 knots.

At New York :

The *Grosser Kurfurst*, a North German Lloyd liner built in Germany in 1899; 580 feet long; 13,000 gross tons; maximum speed, 15 knots.

The *Kaiser Wilhelm II*, a North German Lloyd liner built in Germany in 1902; length, 706 feet; 19,000 gross tons; maximum speed, 20 knots.

The *George Washington*, a North German Lloyd liner built in Germany in 1908; length, 722 feet; 26,000 gross tons; maximum speed, 18 knots.

The *Friedrich der Grosse*, a North German Lloyd liner built in Germany in 1896; length, 546 feet; 11,000 gross tons; maximum speed, 15 knots.

The *Vaterland*, a Hamburg-American liner built by Blohm & Voss, of Hamburg. Keel laid September, 1911; launched May 14, 1914. The *Vaterland* had made only two trips to America after being commissioned, and was on her third round voyage when interned. Length, 962 feet; draft, 38 feet 6 inches; beam, 100 feet 5 inches; 54,000 gross tons; maximum speed, 22.2 knots. Her bunker capacity of 9,000 tons of coal was insufficient by 1,500 tons to give her a steaming radius reaching across the ocean and back again. Turbine driven, 4 propellers, 90,000 horsepower.

The *Koenig Wilhelm II*, a Hamburg-American liner built in Germany in 1907; length, 508 feet; 9,500 gross tons; speed, 13.5 knots.

The *Martha Washington*, a liner belonging to the Union Navigation Company, a German corporation, and built in Glasgow, Scotland, in 1908; length, 460 feet; 8,000 gross tons; maximum speed, 18 knots.

The *Barbarossa*, a North German Lloyd liner built in Germany in 1896; length, 544 feet; 11,000 gross tons; maximum speed, 13.5 knots.

The *Princess Irene*, a North German Lloyd liner built in Germany in 1900; length, 523 feet; 11,000 gross tons; maximum speed, 15.6 knots.

The *Hamburg*, a Hamburg-American liner built in Germany in 1899; length, 520 feet; 10,500 gross tons; maximum speed, 13 knots.

The *President Lincoln*, a Hamburg-American liner built in Belfast, Scotland, in 1907; length, 599 feet; 19,000 gross tons; maximum speed, 14.5 knots.

The *President Grant*, a Hamburg-American liner built in Belfast in 1907; length, 615 feet; 18,000 gross tons; speed, 12.5 knots.

At Philadelphia:

The *Prinz Eitel Friedrich*, a North German Lloyd liner built in Germany in 1904; length, 506 feet; 8,000 gross tons; speed, 15 knots.

The *Kronprinz Wilhelm*, a North German Lloyd liner built in Germany in 1901; length, 663 feet; 15,000 gross tons; speed, 20 knots.

At Norfolk:

The *Neckar*, a North German Lloyd liner built in Germany in 1901; length, 517 feet; 10,000 gross tons; speed, 13 knots.

The *Rhein*, a North German Lloyd liner built in Germany in 1899; length, 520 feet; 10,000 gross tons; maximum speed, 13 knots.

At Cebu, P. I.

The *Princess Alice*, a North German Lloyd liner built in Germany in 1900; length, 545 feet; 10,000 gross tons; speed, 14.5 knots.

A battalion of infantry from Governor's Island seized the ships at Hoboken. These troops marched upon the piers, through canyons flanked by walls of empty beer kegs, went upon the ships, arrested officers and crews, and in the name of the United States formally took possession of the vessels. Simultaneously a like procedure was going on at all the other ports. As soon as the soldiers had searched the ships for possible bombs or other dangerous traps, a force of marine engineers, appointed by the United States Shipping Board, inspected the machinery; and at once the worst was revealed. The engines and, in some instances, the boilers of the vessels had been deliberately wrecked, apparently beyond repair.

All signs pointed to concerted action carried out upon orders from some central source. There was striking similarity in the damage done on all the ships. The machinery of nearly every one had been disabled by breaking the cylinders of the engines. Maritime Germany still clung to the old-style cylinder engine; the *Vaterland*, of all the interned liners, was the only one

equipped with the more modern Parsons turbines. The individuality of one German commander expressed itself in sawing through the piston rods, the connecting rods, and the boiler stays. Two or three ships had been dry-fired—that is, fires had been started under the empty boilers—but this had been carelessly done, and had not resulted in any irreparable fusing and melting of metal.

On board one of the seized vessels our officers found an interesting document which, by some chance, the German sailors had failed to destroy. It was a memorandum written, evidently, by one of the commanding officers of the ship, and it read: "Commenced wrecking engines January 31, 1917." This scrap of writing showed clearly that the Germans, despite their show of surprise that the United States should consider their submarine policy a cause of war, knew well before that policy ever went into effect that it would probably bring about the belligerency of the United States; and, simultaneously with ordering the wholesale sinking of Allied merchant shipping at sea, they took steps which, they believed, would prevent us from using their interned tonnage for at least two years. Long after the armistice, there came complete confirmation that the damage wrought to the interned German shipping in our ports had been carried out under orders emanating from the Imperial German Government and relayed to the ships by the German embassy in Washington. This information appeared in correspondence of the German foreign office made public in January, 1920, by the Noske government in Berlin. One of the communications of early 1917, from ex-Chancellor von Bethmann-Hollweg to Count von Bernstorff, the German ambassador at Washington, after informing the ambassador of the decision to begin unrestricted submarine warfare on February 1, 1917, concluded with these words: "I am fully conscious that our proceedings may bring on a rupture or possibly war with the United States. We are determined to run this risk. Finally, I remind you of preparations for entirely incapacitating the German ships. Your Excellency will be responsible for giving the necessary word at the right moment

and in a safe way, so that no German steamer in utilizable condition may fall into alien hands."

Without doubt, the Germans relied utterly on the ultimate success of their submarine campaign. They discounted in advance the enmity of America. That they might lose the war was a possibility which they never imagined. Had they considered defeat even a possibility, they would not have been content merely to damage their ships; they would have destroyed them altogether. The sort of damage done expressed the German belief that we would repair the vessels, but that the work would take us at least two years, incidentally tying up factory equipment and using up resources of steel and labor otherwise available for other war activities. When Germany had won her submarine victory, she would exact, as part of the indemnity from the United States, her own ships, which by that time we would obligingly have put into good condition, ready for sea.

The calculation was too near likelihood for our comfort—except for one particular. It never occurred to those who ordered the damage done that we Americans might mend the broken machinery instead of replacing it with new. Here was the German mentality, typically exerted. Many maritime customs result from the rules of the vessel insurance companies, the underwriters; and one of the hard-and-fast rules is that a vessel will not be insured if her owners send her to sea with repaired cylinders. A cracked or broken cylinder must be replaced with a new one; otherwise, no insurance. Commercial ships do not go to sea without insurance. The German mind assumed that what never had been done never would be done; *ergo*, "the idiotic Yankees," as one notorious German deportee called us, would have to build new machinery for these vessels before they could operate them.

It must be confessed that this was the first thought, too, of the experts who surveyed the damage for the Shipping Board. These were practical shipping men, steeped in the traditions of ocean commerce. The havoc in the engine rooms was, to a sailor's eyes, distressing and hideous. Our inspectors could

picture in imagination the scenes that had occurred in the bowels of these vessels as they lay apparently lifeless and deserted at their piers—the half-naked, sweating gangs of vandals heaving and battering and smashing with steel rams. The great driving cylinders, some of them as much as nine feet in diameter, were pounded into uselessness. In some of them, great holes yawned where the rams had plunged through the thick iron; in others, there were wide fissures, six, seven, and eight feet long. Our surveyors put it down as a replacement job, and estimated two years as the time it would take to put the ships in commission.

But meanwhile an important thing had occurred. The Navy had seized two German ships rated as auxiliary cruisers, and had also received from the Shipping Board some other German ships for repair. The Navy had never been in contact with the rules of ocean underwriting; no trade tradition stayed it from committing what private shippers regarded as nothing less than maritime heresy. The technicians at the New York Navy Yard, after examining the broken machinery of these few ships, recommended that the cylinders be mended by electric welding. In due time this recommendation reached official Washington, which asked the Navy Bureau of Steam Engineering to examine every one of the ex-German ships and decide whether the welding torch might not be able to achieve all the necessary repairs. The bureau, after an investigation, decided that it might.

Accordingly, on the 11th day of July, 1917, the United States Shipping Board turned over to the Navy the entire job of repairing the ex-German ships. In the course of the next six months there occurred one of the most remarkable exploits in the history of marine engineering. One after another, all of these great ships were repaired by the electric welding rod, and each was ready for sea after a few brief weeks in the shipyard. Indeed, so rapid was the repair that frequently the broken engines were in running condition again before the gangs of men engaged in converting the vessels into troop or army cargo carriers had finished their work.

The Navy has modestly disclaimed the title of discoverer, pointing out that electric welding had been employed for years in numerous processes of industry. But this estimate of its own achievement seems to be entirely too self-effacing. The vital importance of the work, the great size of the parts involved, the fact that welding in this instance was applied to cast iron rather than to steel, and the condemnation sure to fall upon those responsible if the job failed at some critical moment and the failure either delayed the preparation of the German liners for the transport service or endangered or actually cost the lives of our soldiers at sea—all of these elements combined to stamp the navy engineers as courageous pioneers. It must be added that they made their decision in the face of strong opposition from both the experienced marine-engine builders and the ocean insurance writers.

The process of electric welding may be understood by anyone with a rudimentary knowledge of electricity. To the eye it appears that the welding is accomplished by means of a torch. As a fact, the metal surface which receives the weld is charged with electricity, thus forming itself one of the electrodes. The other electrode is a steel rod held by the welder. As the point of the charged rod is brought close to the electrified metal to be welded, an arc forms between the two, creating a heat so great that it more than melts the steel of the rod—it actually transforms it into gas. Particles of the metallic gas cross the gap on the current of electricity and deposit themselves in the form of steel on the place which is being welded.

The cylinders of marine engines are of heavy cast iron. It is easy enough to weld steel edges by the electric process, for steel is hard and not easily damaged by heat. To weld steel upon cast iron is an entirely different problem. Cast iron is brittle; and the same heat which fuses the steel is likely, unless the welder exerts special care, to crack and ruin the iron.

When two sections of cast iron are to be welded together with steel, the edges are beveled outward to form a V-shaped groove. The first operation is to plate the raw edges of the iron with a thin film of steel, to give a surface to which the rest



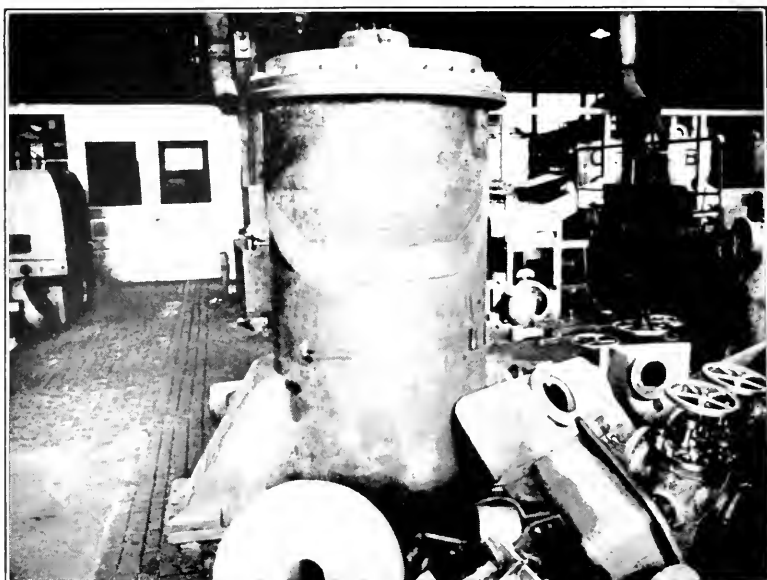
From Bureau of Steam Engineering, U. S. N.

1. BROKEN CYLINDER



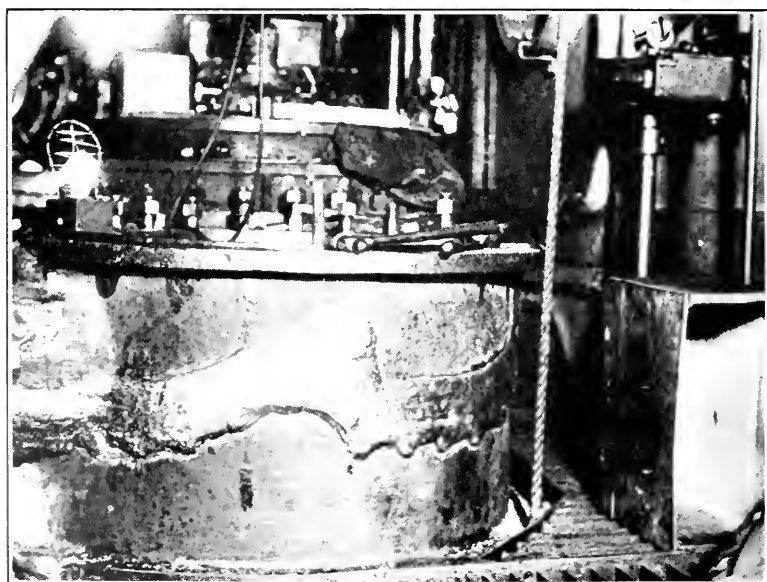
From Bureau of Steam Engineering, U. S. N.

2. PATCH IN PLACE READY FOR WELDING



From Bureau of Steam Engineering, U. S. N.

3. WELDED



From Bureau of Steam Engineering, U. S. N.

REPAIRED CYLINDER ON S. S. *PRINCESS IRENE*, SHOWING
BONE-KNIT EFFECT OF WELDING

of the weld will adhere. This is a most laborious, painstaking, and time-consuming process. The current of electricity must be kept relatively small, so as to produce the smallest arc that can be used. If a heavy current of electricity were employed, the heat would travel back through the iron and crack it. The arc used must be only large enough to melt a thin surface on the edge of the iron and deposit gaseous steel upon the molten metal. The process is almost as delicate as lace-making, and the welding-rod not much thicker than a needle.

After the welding surface has been created, a second plating is laid on, this time with a slightly heavier current. And thus, layer by layer, the weld is built up, more and more current being used as the weld grows thicker, until at length the welder can do his work rapidly, with the hottest arc and large rods.

In this manner the cracks in the cylinders were repaired. But the wrecking crews had sometimes pounded chunks out of the cylinders. For such injuries, patching was the remedy. Each patch was cast in a foundry, taken to the ship, and held in place while its edges were steel-welded to the edges of the hole in the cylinder.

The Germans never dreamed that we could weld these breaks. On the ex-German steamship *Hamburg*, now the *Powhatan*, our inspectors found a paper, signed by the German chief engineer of the ship, setting forth in detail the vandalism which had been wrought under his direction—a confidential report, evidently prepared for the information of some superior officer. Every item on the list was found to agree exactly with the actual damage. After a dozen or so entries in the list the German had written the confident endorsement: "Cannot be repaired." But they were repaired just the same.

The total cost of the repairs was under \$500,000. Every ex-German troopship was repaired and refitted for service within six months of the day when the Navy received them all; many were sent out with troops within a few weeks. Except for those vessels which already bore appropriate names, as the boats came into commission we rechristened them more pleasantly to American ears. Here follows a list of the seized

ships which we converted into troop transports, with their original names, their American names, and the dates when they came into the active transport service.

<i>Former Names</i>	<i>Rechristened Names</i>	<i>Date of first departure with troops</i>
<i>Vaterland</i>	<i>Leviathan</i>	Dec. 15, 1917
<i>President Lincoln</i>	<i>President Lincoln</i>	Oct. 19, 1917
<i>Cincinnati</i>	<i>Covington</i>	Oct. 19, 1917
<i>Koenig Wilhelm II</i>	<i>Madawaska</i>	Nov. 12, 1917
<i>Kronprinzessin Cecile</i>	<i>Mt. Vernon</i>	Oct. 19, 1917
<i>Grosser Kurfurst</i>	<i>Æolus</i>	Nov. 26, 1917
<i>Princess Irene</i>	<i>Pocahontas</i>	Sept. 8, 1917
<i>Neckar</i>	<i>Antigone</i>	Dec. 14, 1917
<i>Amerika</i>	<i>America</i>	Oct. 19, 1917
<i>President Grant</i>	<i>President Grant</i>	Dec. 26, 1917
<i>Hamburg</i>	<i>Powhatan</i>	Nov. 12, 1917
<i>George Washington</i>	<i>George Washington</i>	Dec. 4, 1917
<i>Kaiser Wilhelm II</i>	<i>Agamemnon</i>	Oct. 19, 1917
<i>Friedrich der Grosse</i>	<i>Huron</i>	Sept. 8, 1917
<i>Barbarossa</i>	<i>Mercury</i>	Jan. 4, 1918
<i>Rhein</i>	<i>Susquehanna</i>	Dec. 14, 1917
<i>Prinz Eitel Friedrich</i>	<i>De Kalb</i>	June 14, 1917
<i>Martha Washington</i>	<i>Martha Washington</i>	Feb. 10, 1918
<i>Princess Alice</i>	<i>Princess Matoika</i>	May 10, 1918
<i>Kronprinz Wilhelm</i>	<i>Von Steuben</i>	Oct. 19, 1917

Curiously enough, the Germans purposely damaged the machinery of their most magnificent vessel, the *Vaterland*, only a little. The Americans who surveyed the vessel surmised that this unexpected forbearance was due to ignorance and unfamiliarity with the machinery, rather than to anything else. The *Vaterland* gave the German mariners their first experience with turbine engines, and when they tried to manage the big ship they found themselves in a pot of troubles. The vessel had floundered across the Atlantic on her last commercial trip and had limped into New York on three-eighths of her power.

Evidently the Teutonic skipper figured that, since *he* had been unable to operate her, *we* could not use her until we had laid her up for a long course of overhauling and repair, and that therefore it would be a waste of effort to add to the damage.

On the *Vaterland* our people found what was probably the most complete equipment ever installed in a ship. The *Vaterland's* fittings included eighteen electric elevators and a system of three hundred and fifty electric clocks controlled by a master clock on the bridge; and her whole finish was up to this standard. Her engines were the latest-type Parsons turbines, built in 1913, their 135 revolutions a minute giving 90,000 horsepower. It required forty-six boilers of the 1913 Yarrow type to generate the steam for her turbines and other engines. Her fresh-water tanks held 1,124,000 gallons, and besides these she had on board a plant that could distill 24,000 gallons of fresh water a day. Yet this mighty vessel, fresh from the builders' hands, with the record of only five Atlantic crossings on her log, was found to be in wretched condition. Of her eight turbines, four were driving engines and four were for backing the ship. All four backing turbines were out of commission, one of them with a cracked casing; the ship had last come into port unable to check her momentum at all with her backing machinery. One of her driving turbines was also disabled. She had made her last commercial voyage across the Atlantic on three of her four propellers, averaging twenty knots an hour instead of the twenty-two which her passengers had paid for. Evidently the celebrated German efficiency had not extended to the engine room of the *Vaterland*.

All the interned ships, before they could be operated efficiently, had to go to dry-dock to part with the marine accumulations which had formed during their years of idleness. The *Leviathan*, as we may henceforth call the *Vaterland*, was anchored by the barnacles that had attached themselves to her hull. There was no dry-dock in the United States large enough to take her. Divers were sent down to scrape her bottom and propellers as cleanly as they could. The plan was to send her then to the immense dry-dock at Balboa, on the Pacific end

of the Panama Canal. But a slide at the Culebra Cut had so filled up the Canal that there was not enough water to float the *Leviathan* through; hence it was necessary to dock her at Liverpool. But first she was sent out on a trial voyage to Guantanamo, Cuba; and on the trip back she developed a speed of more than twenty-three and a half knots an hour. She was then placed regularly in the transport service, running to Liverpool—the only American troop transport to have an English destination. She carried troops on her first trip across. After she had discharged her passengers she went into the dry-dock at Liverpool for several weeks, during which she was cleaned and put into shape.

The Germans had had trouble in maneuvering the vessel in New York harbor; but our navy officers, once they had learned her idiosyncrasies, considered her one of the easiest transports to handle. It was necessary, though, to humor her. It proved to be no trick at all to bring in the *Leviathan* to her dock; but undocking her presented some difficulties. Unless the river currents were running exactly right, it was almost impossible to turn her nose downstream, no matter how many tugs pushed and pulled to bring her about. Twice a day there is a minute at which the tide in the North River ceases to ebb and starts to flow, and the *Leviathan* had to be backed away from her pier exactly in one of those two minutes. At such a moment the water is dead slack on the Hoboken side, but the flood tide is beginning to make on the New York side. As the immense ship backed out into the stream, her bow would be in no current at all, but her stern would soon enter the upstream current in the east side of the river, and this would help to swing her around.

There was a trick, too, in taking her down the bay. Although New York Bay presents, apparently, a deep-water fairway everywhere, the *Leviathan*, with her nearly forty feet of draft, had to hunt the channels like a Mississippi River steamboat. Between the army piers at Hoboken and the Narrows are many places too shallow for the *Leviathan*; indeed, anywhere between the Hoboken docks and the Statue of Liberty there

is not enough water in the middle or on the western side of the river and bay to float the vessel. She had, therefore, to be maneuvered up and down the east side of the river, in what is known as the prehistoric gorge of the Hudson. This channel goes down through the Narrows in a fairly uniform course. The gorge is accurately known to Captain William S. McLaughlin, master pilot of the New York-Sandy Hook Pilots' Association, who invariably took the *Leviathan* in and out of New York harbor during her army career. Moreover, though Ambrose Channel is dredged to accommodate the largest vessels, the *Leviathan* did not dare go through except at flood-tide. There is only forty feet of water in Ambrose Channel at low tide, and during the spring tides there may be as little as thirty-nine.

The *Leviathan* had no great margin of stability. Her designers, to give her the slow and easy roll that passengers like, built her with a high center of gravity; and when she was loaded with thousands of troops it was necessary to control the men to prevent them from all rushing at once to one side of the vessel or the other to look at the harbor sights. Not that they could have upset her: but they might have given her a list serious enough to increase her draft and perhaps make her scrape along the bottom of the channel. Because she heeled over in a breeze, she had been equipped with large water-ballast tanks which helped counteract her sensitiveness to wind pressure.

Each German ship, after it was repaired, was taken to sea for a trial trip of at least forty-eight hours, during which the officers were instructed to put the severest sorts of strain upon the machinery. All the repaired parts functioned perfectly. But the hardest test of all was to come when the ships were steaming at top speed through the submarine zone. There some of the ships attained, for short intervals, speeds greater than they had ever been able to make before. If there were weak parts in the machinery, they might have been expected to show then; but every one of the repaired vessels went through the ordeal without mishap. The welding has been likened to the

natural repair of a broken bone—stronger at the break than it was before.

The ex-German ships, coming so promptly into the transport service, bridged a gap that would otherwise have existed until the new American shipyards began launching troopships. These vessels alone carried to France one-fourth of the total personnel of the American Expeditionary Forces, transporting 500,000 Yankee soldiers to Europe a year before they could otherwise have got there. In other words, at the date of the armistice the A. E. F. was stronger by half a million men than it would have been if we had placed new machinery on the seized German liners instead of repairing the machinery there already.

The Secretary of the Navy, in his annual report for the fiscal year 1918, characterizes the repair of the German ships as "one of the greatest engineering achievements of the period," and continues: "The restoration of these magnificent ships to the Service reflects the greatest credit upon the naval officers concerned and upon the officers and employees of the welding and engineering companies who carried out the work. It is an illustration of the part played in winning the war by the men who handled the electric torch or who fashioned and secured the mechanical patches for these damaged cylinders. . . . The men who made this possible performed a service of as high an order as have the brave boys who were thus enabled to take their places on the fighting line."

CHAPTER XXIV

THE NEW MERCHANT MARINE

ON the 15th day of October, 1917, six months after the declaration of war against Germany, the entire steam-driven merchant marine of the United States, excluding ships of less than 2,500 tons and also the German tonnage seized by the Government, amounted to about 2,500,000 tons deadweight. On the first day of the armistice, little more than a year later, the American merchant marine, including sail, had reached nearly 9,000,000 tons deadweight. Of this tonnage, which includes both passenger and cargo-carrying vessels in commission at the time, about 2,500,000 tons deadweight of steamships were in the Army's overseas service. In other words, the Army alone was operating at the termination of hostilities about as much steam tonnage as there was under the American flag all together when the war was declared.

The army tonnage was unequally divided: 500,000 deadweight tons in the troop-carrying service and 2,000,000 tons in the freighting of A. E. F. supplies. For every ton used in the transoceanic ferrying of troops, four tons had to be employed in carrying supplies to the soldiers transported. That proportion—500,000 to 2,000,000, or one to four—fairly represents the relative difficulties of the Army in procuring the two sorts of vessels. Our military expansion never reached the point at which lack of troopships was any real embarrassment to it; but the limitations of our available cargo tonnage strictly governed our war plans from start to finish.

The growth of the Army's cargo fleet cannot be considered intelligently apart from the growth of the entire mercantile marine under the American flag. The overseas supply service

rested upon a scaffold, the legs of which were the essential import, export, and coastwise commercial trades. The whole thing was a complete edifice; but the Government had continually to exercise care lest the supports become needlessly strong or the superstructure, which was the military cargo fleet, topheavy. The materialization of America's immense merchant marine in the nineteen months of war—a feat largely the product of organization and of sheer business administrative skill, and an achievement disappointing in only the single respect of the number of new ships built in American yards—was, then, a prime factor in our military transportation. Without going into the general history of that growth, it will be profitable to consider at this point such phases of our maritime expansion as related directly to the work of the War Department in transporting troops and supplies to France.

First, for clarity in what is to follow, a word about ship measurements. The size of a vessel is variously expressed in gross tons, net tons, and deadweight tons. All three are more or less indefinite in meaning.

Gross tonnage is a matter of cubical dimensions. In computing gross tonnage, a theoretical ton of cargo is assumed to occupy 100 cubic feet of space. The total interior space of the ship in cubic feet is divided by 100, and the quotient is the gross tonnage. Those who are fond of mathematical nicety can find little satisfaction in gross-tonnage figures, for each maritime nation has its own rules for measuring a vessel's interior space. It is obvious that certain spaces should not be included in the calculation—such space, for instance, as that between double bottoms. Thus, a ship's gross tonnage depends to a considerable extent upon what national flag she flies. Ships passing through the Panama or Suez canals, however, pay toll rates according to their gross tonnage; the canal administrations have adopted standard and identical measurement rules; and these rules are tending to standardize ship measurements throughout the world.

Net tonnage is reckoned by subtracting from the total cubic volume of a hull the space allotted to departments necessary

in the operation of a ship, the result being expressed in tons of 100 cubic feet. That is, the space given to the engine room, the boiler room, the coal bunkers, the quarters for the crew, and so on, is subtracted from the total interior space, the net tonnage representing the space which can actually be occupied by cargo and passengers. But here again is confusion, for national rules and canal rules are at variance as to what spaces should be subtracted.

In general, both gross and net tonnage figures understate the actual carrying capacities of ships. A more satisfactory measurement is that in deadweight tonnage, for this is a measurement of carrying capacity by weight rather than by space. A ship's deadweight tonnage is the figure which represents the weight in tons of the load which sinks her in the water to her deep-load water line—the maximum weight, including her fuel load, which she can safely carry. Yet even a deadweight measurement is little more than a rough indication of the amount of cargo a ship can carry. This amount depends always upon the kind of cargo loaded—upon its density. You could load a ship to the danger point with bar lead and still have plenty of space left in her cargo holds. If the cargo happened, on the other hand, to be baled feathers, you could cram the holds full, and still the ship would not be deep-loaded or anything like it.

A calculation in deadweight tonnage assumes that average cargo stows one ton to each fifty cubic feet. From one-fifth to one-quarter of a vessel's deadweight tonnage is allotted to her coal, her crew, and her stores of food for those aboard. From three-quarters to four-fifths of the deadweight tonnage of a freight vessel is available, then, for cargo. If the cargo is average in density—if a ton of it exactly occupies fifty cubic feet—or if it is of more than average density, a vessel of 5,000 deadweight tons can carry 4,000 tons, since about 1,000 tons, in ton spaces of fifty cubic feet, will be given over to fuel, crew, and stores. If the cargo is of light stuffs and one ton of it fills, say, 100 cubic feet of space, then the ship, although of 5,000 deadweight tons' capacity, will carry only 2,000 tons

of cargo. The net, gross, and deadweight tonnages of a vessel, respectively, are in about the proportion of 3: 5: 8. That is, a ship of 3,000 net tons will be of about 5,000 gross tons and 8,000 deadweight tons.

The first step in the expansion of the American merchant marine was taken on August 3, 1917, when the United States Shipping Board requisitioned at the shipyards all steel vessels of 2,500 deadweight tons or over then under construction. Four hundred and fourteen ship projects were affected by the order, from the more mature ones, represented by hulls launched and nearly ready for commission, to embryonic ones which existed as yet only in plans and drawings or, sometimes, in ship-building materials collected at the yards. But, whether nearly ready for sea or not yet laid down on the launching ways, the four hundred and fourteen projects stood for a future deadweight capacity of nearly 3,000,000 tons.

These ships were being built both for American and for foreign owners; but more than half of them would eventually have gone into foreign registry. The construction tied up practically all the shipbuilding resources of the United States, except those dedicated to American navy work. Many a prospective owner of these ships thought he saw fortune go glimmering when the Government applied its power of requisition, for ocean freight rates had reached enormous heights. But the Government had no alternative. The requisition gave the Government direct control over nearly all the private shipyards of the country. Thereafter the Emergency Fleet Corporation, which was the Shipping Board's construction agency, could and did allocate materials and machinery among the various jobs and get them all started, simplify designs of all vessels that were not too far advanced in construction, and in general push the projects through to completion. Soon the boats began appearing in our army convoys and on our foreign trade routes. Before the armistice, 255 of them were in commission—nearly 1,600,000 deadweight tons.

This assertion of eminent domain, though ultimately of great effect, was not the one official act which immediately

added the most tonnage to the Government's merchant fleet. On October 15, 1917, the Shipping Board commandeered all commissioned and going American steel cargo steamers of 2,500 deadweight tons or over, and also all American passenger vessels of more than 2,500 gross tons that were suitable for foreign service. This action added instantly to the federal marine 408 merchant vessels, of more than 2,600,000 deadweight tons.

Generally the Government commandeered only the use, not the title and ownership, of this tonnage. It compelled the owners to charter their vessels to the Government for so long as it elected to use them. The charters were of two sorts. The owners of many boats continued, under government orders, to operate their ships physically, fueling and crewing them and sailing them at sea. The Government assumed the risk of war losses, but the owners shouldered the ordinary marine hazards. An arrangement of this sort was known as a time-form charter. The other general agreement was known as the bare-boat charter; and under it the Government itself operated the ship and assumed all risks. At first the tendency was toward time-form charters. As the tonnage grew, however, it became more difficult to secure civilian crews. Under bare-boat charters, the Navy could put enlisted men on ships. In convoy work, moreover, the ideal vessel was one whose bridge and engine room were under navy discipline. Naturally, then, the bare-boat charters became more and more frequent. All the chartered troopships were under bare-boat charter, and by the end of the war more than half of the Army's cargo fleet was operated under the same arrangement.

By new laws and by executive proclamations suspending various restrictions of the existing laws, the Government encouraged American citizens to purchase foreign tonnage and bring it under the American flag. During the first year of war such purchases added over 500,000 deadweight tons to the American merchant marine.

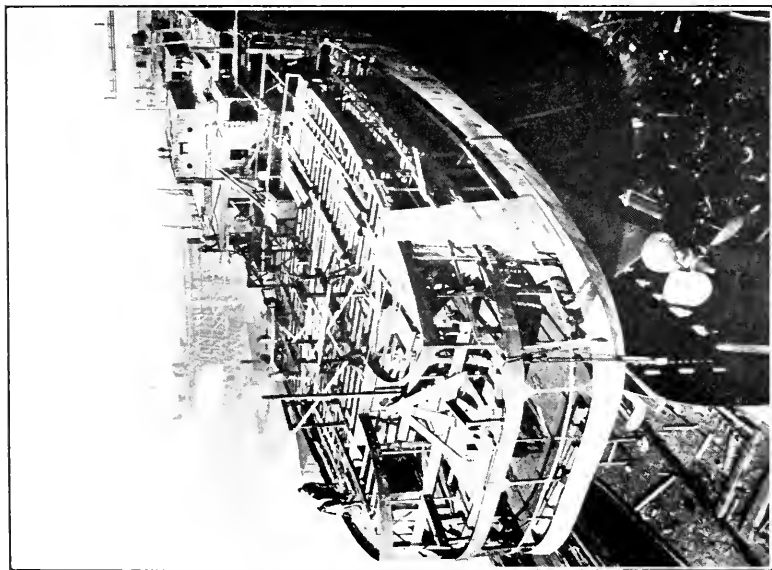
Not content with the enemy tonnage seized in American ports at the declaration of war, the Shipping Board went out

and acquired numerous other ex-Austrian and ex-German vessels seized by countries which had followed our lead into the struggle. From China we chartered two ex-Austrian vessels and from Siam two ex-German ones; and then we bought outright, from various small belligerents, nine ex-Austrian vessels totaling 58,000 deadweight tons in capacity. We chartered eight ex-German steamers from Uruguay and five others from Peru, besides four ex-German sailing vessels which Peru had seized. These deals put under the flag thirty ex-German and ex-Austrian ships, besides the enemy tonnage which we had seized in our own right.

Simultaneously the Shipping Board was chartering every ton of neutral shipping it could lay hands on. It managed, first and last, to secure more than 1,800,000 deadweight tons in this way. As a neutral, we should have had a hard time to secure a single ship from a European neutral to use in blockade running; but as a belligerent, with a belligerent's extraordinary powers, it was easy. We wrested the ships from unwilling owners by a sort of righteous coercion.

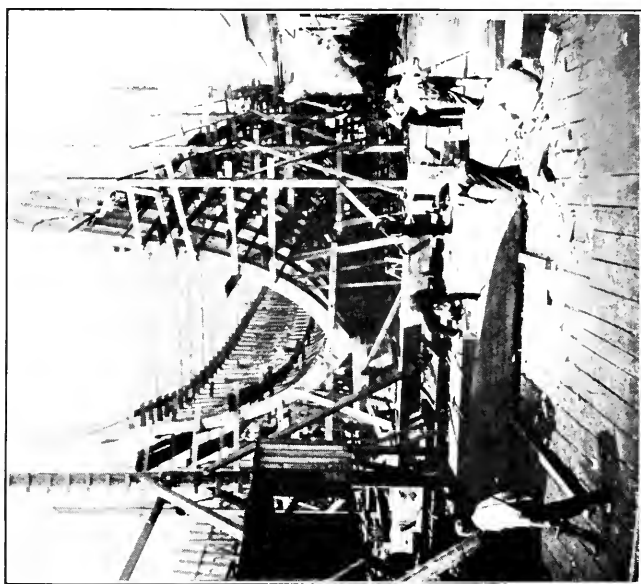
A great deal of this neutral tonnage was lying idle because the owners feared to commit it to the perils of the deep. Moreover, Germany menaced the neutrals of northern Europe, who needed only to look at Belgium to see the fate of a small country which dared oppose the will of the Imperial German Government. Germany emphatically frowned upon any outside aid to Allied shipping, with the result that the northern European neutrals were not overeager to operate their merchant marines at highest efficiency. Not even the prevailing ocean freight and charter rates could tempt out all their vessels.

In her need to restore this tonnage to the sea lanes, the United States found a peaceful weapon more effective than German intimidation. Let the northern neutrals fear Germany as they might, there was not one of them which was not more or less dependent for its very existence upon American supplies of one sort or another, particularly food supplies. That fact gave us the key to the situation. The American War Trade Board simply forbade the export of American products to these



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**REQUISITIONED HULL OF TROOPSHIP
ORIZABA UNDER CONSTRUCTION**



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WAR CONSTRUCTION OF WOOD SHIPS

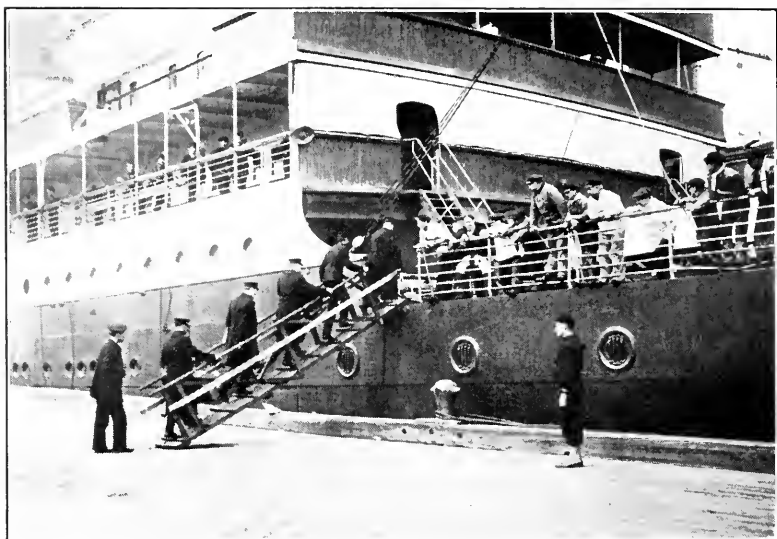


Photo by Signal Corps

SEIZURE OF DUTCH VESSEL ZEELANDIA



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HOG ISLAND SHIPYARDS

neutral nations unless they in turn agreed to charter to the Shipping Board all the tonnage they could spare from their own most fundamental needs. Many of the vessels thus routed out were small and not well adapted to transatlantic war trade; but, placed in our South American and West Indian trades, they released steamers which were serviceable in the military convoys.

There was one neutral country, however, which not even the withholding of American commodities could induce to release her shipping to us. This was the Netherlands. The Dutch, like the Belgians, had a common frontier with Germany, and Germany was always in a position to punish the Netherlands if the Dutch people incurred her displeasure. In January, 1918, the Dutch temporarily yielded to American importunities and agreed to turn over on a ninety-day charter 460,000 deadweight tons of their ships in return for certain sorely needed American goods. It was stipulated in the agreement that part of this tonnage was to be used in the Belgian relief work and part to carry American supplies to the Swiss. This plan would release for other service American ships then tied up in Swiss commerce. Both sides made concessions to Switzerland to ensure her neutrality. We put our precious vessels at her service, and the German submarines guaranteed these ships safe conduct to the port of Cette, on the Mediterranean coast of France. For each Dutch ship sent to Holland with Belgian food supplies, the Dutch agreed to send a vessel of corresponding size to the United States; and if any of the chartered Dutch tonnage chanced to be used for carrying cargo to the Netherlanders themselves, they were to replace it, ton for ton, with ships to be used as we chose.

We may never know the full extent of the pressure put upon the Netherlands by Germany to make the Dutch people terminate this agreement. Germany had staked all upon her submarine campaign. Every ton of shipping added to the fleets at the disposal of the Allies let more German blood and prolonged German agony. Whatever may have passed between the two countries through diplomatic channels, the Dutch not only

refused to extend the arrangement beyond the ninety-day period, but they did not even supply the 460,000 tons promised, of which they fell short by about 160,000 tons.

In self-protection the American Government then exercised an ancient and extraordinary power which international law confers upon a belligerent, a power known as the right of angaria. The word comes down from Roman law through feudal times, when it meant compulsory service to a lord. In international law, angaria is the seizure, by a belligerent justified in the act by extreme necessity, of neutral tonnage within its own ports. The law requires adequate compensation to the neutral owners; but, even so, the process is not pleasant to the angariated. On March 20, 1918, following precedents abundantly set by Prussia in 1870, we exercised the right of angaria upon eighty-seven Dutch vessels of more than 500,000 dead-weight tons. All these ships were lying in United States continental and insular ports.

For a few days the Dutch Government expressed such a sense of outrage at this procedure that any casual newspaper reader might well have dreaded an imminent rupture of friendly relations between the Netherlands and the United States. It is probable that a good deal of the protest was sound and fury for the benefit of German ears, for our subsequent negotiations with the Dutch owners were conducted in all friendliness. The arrangement was, in fact, a most fortunate one for the shipping interests of the Netherlands. Being afraid to operate their ships as conditions were, they were not profiting by the high ocean freight rates. The American Government, on the other hand, paid handsomely for the use of Dutch ships; paid, in fact, rates higher than it was willing to allow to other owners of vessels. The Government leaned backward in the rectitude of its financial treatment of the Dutch. It assumed all risks and agreed to pay back any losses in money or in kind.

The power of the United States to barter for neutral shipping with American food and other necessities brought under the American flag by charter nearly 900,000 tons of Norwegian

shipping, of which more than 250,000 tons were in sailing vessels. An agreement with Sweden gave us 200,000 tons of steamships, half of which could be used in the war zone. From Denmark we secured more than 250,000 deadweight tons, of which, however, only 88,000 tons could be used in war service. Most of the chartered Danish tonnage was available only for the immune Belgian relief and Swiss trades; but it enabled us to draw other ships from these routes and put them into the convoys.

Then we found that we could bargain for vessels with some of the Asiatic belligerents. Japan needed steel. Japan was prosecuting a great war enterprise in munitions and shipbuilding. For raw materials the Japanese were largely dependent upon importations from the United States. Holding thus the key to the Nipponese industrial situation, America obtained in the spring of 1918 an agreement which brought to the United States by purchase fifteen Japanese ships, totaling about 128,000 deadweight tons. All these were new vessels, some of them not yet in commission. All were to be delivered by the end of the calendar year 1918. The American War Trade Board agreed in turn to license the export of one ton of raw steel for each deadweight ship-ton delivered. At the same time the Japanese agreed to sell to the United States half the total output of their shipyards during the first six months of 1919. This would secure to the American flag about 250,000 deadweight tons. In reciprocity we agreed to supply to Japan about one ton of American steel for each two tons of the 1919 deadweight shipping delivered. Before the armistice nearly 100,000 deadweight tons of Japanese-built ships joined our fleets under American government ownership; and in addition we were able to secure from Japan by charter over 150,000 deadweight tons.

Similarly, we agreed to export steel to China to go into the construction of four 10,000-ton steamers to be built for the United States by the Chinese government shipyards at Shanghai.

A sailing vessel, depending for speed upon the caprice of the

winds, was easy hunting for the submarine. What sail there was in the French merchant marine was therefore practically useless to France, with her submarine-infested coasts. The French chartered to us some of their sailing ships that were in outlying parts of the world; we put them into our safe trades, and thus released still more steamers for war-zone traffic.

So, by seizure, requisition, commandeering, angaria, charter, and purchase, the Government built up the American merchant marine. And in addition to all this administrative maneuvering, the Government was conducting at the same time, through the Emergency Fleet Corporation, the largest constructional enterprise in new vessels which the world had ever known. Although this construction did not deliver the tonnage expected, its contribution formed an appreciable part of the total shipping at our command.

When the United States entered the war there were but 37 American shipyards for building steel vessels, and navy contracts had tied up seven-tenths of their capacity. The 37 shipyards possessed 142 launching ways. By the date of the armistice there were 398 launching ways for steel vessels. In April, 1917, there were 24 shipyards, with 73 shipways, for wooden ships. By November, 1918, these 73 shipways had become 418.

This expansion followed the development of the Emergency Fleet Corporation's program of shipbuilding. Three sorts of ships were laid down on the stocks—steel, wood, and concrete. The steel construction brought into existence the standardized ship, a ship built in series of standard manufactured parts assembled on the launching ways. The declaration of war, by bringing to a standstill the construction of steel bridges and steel buildings, left without their accustomed business a great many mills which could readily turn to the manufacture of steel members of ships. The adoption of standardized ships made it possible for all these industrial plants to become adjuncts of the national shipbuilding.

The Government directly underwrote and financed the

establishment of four huge new steel shipyards. One of them, operated by the American International Shipbuilding Corporation at Hog Island, Pennsylvania, near Philadelphia, was the largest shipyard ever projected. Another was at Bristol, Pennsylvania, operated by the Merchant Shipbuilding Corporation. A third, operated by the Submarine Boat Corporation, was at Newark, New Jersey. The fourth was at Wilmington, North Carolina; its operators were the Carolina Shipbuilding Company. These aided establishments, called agency yards, were all fabrication yards: that is, they took standard parts manufactured either in their own shops or by outside companies, and built ships with them. The four yards together constructed ninety-four shipways, which in themselves gave the United States a greater annual shipbuilding capacity than that possessed by any other nation prior to 1918.

The Emergency Fleet Corporation built and owned five yards, each with four shipways, for the construction of concrete ships.

Outside this official activity, private companies which held contracts with the Fleet Corporation established 198 shipyards. The plans for these yards projected a total of over 1,000 shipways. Many of these ways came into operation during the war. They and the ways created in government yards, added to the facilities which existed before 1917, made the United States, in the autumn of 1918, the greatest shipbuilding country in the world.

The creation of an entirely new shipbuilding industry—an actually productive one—is slow. It takes a long time to build the shops and shipways and another long time to construct hulls after the facilities are ready. During much of the period of hostilities the new yards were engaged solely in building up their plants, and they did not attain heavy production until shortly before the armistice. The Hog Island yard, for example, launched its first hull in August, 1918. In general, the actual deliveries of new ships were trivial compared to the building program. Of steel vessels alone, contracts written up to the autumn of 1918 called for the delivery of well over

8,000,000 deadweight tons. Of this tonnage only about 2,400,000 tons were in commission, and of this latter figure upwards of 1,700,000 tons were part of that privately owned tonnage requisitioned on the ways by the United States in the summer of 1917. On wholly new contracts with the Fleet Corporation, the yards delivered before the armistice about 700,000 tons of steel shipping. Wood steamships built for the Emergency Fleet Corporation and put in service before the armistice totaled less than 100 in number and less than 350,000 deadweight tons in capacity, although the contracts called for the construction of nearly 3,000,000 deadweight tons. The total contribution, therefore, made by new shipbuilding to the merchant fleet during the war period was approximately 1,000,000 tons, or about one-ninth of the total tonnage in commission at the time of the armistice.

The ships in the building program fell into a small number of classes. This statement is most particularly true of fabricated ships built in the agency yards. The Hog Island yard, for instance, concentrated on ships of only two types. At first Hog Island expected to build vessels of one design only, a 7,500-ton cargo ship. Later on, as we noted, it began the construction of 8,000-ton combination cargo-and-troop vessels. The Merchant Shipbuilding Corporation at Bristol attempted quantity production of only a 9,000-ton cargo carrier; and the Submarine Boat Corporation at Newark specialized exclusively in a standardized cargo ship of 5,000 deadweight tons. The designs of private builders, though more diverse, were not many.

The ships launched and commissioned on the Pacific coast also adhered to a few types. They were distinguished as the "West" boats, and were christened to designate their class, with such names as *West Arrow*, *West Coast*, and *West Eagle*. In order not to waste the services of these ships by sending them empty through the Panama Canal to the Atlantic coast, they were loaded at the Pacific coast with American grain billed for delivery to England, France, and Italy. It was waste effort, for that matter, to transfer their cargoes to British,

French, or Italian ships on our Atlantic coast: yet America clung so jealously to every ton of her shipping that she was unwilling to allow the "West" boats to carry these Allied grain cargoes through to Europe unless the consignees made ton-for-ton compensation. Therefore, whenever a "West" boat cleared for Europe with a cargo of Pacific coast grain the British Admiralty allotted to the American merchant marine a so-called "spot" vessel belonging to England or controlled by her; a vessel approximately equal to the "West" ship thus temporarily enlisted in the Allied food service. A "spot" ship was a ship at hand in an American port. The Embarkation Service alone secured the trip use of 170,000 tons of this exchange tonnage.

The iron-ore carriers of the Great Lakes also became of military use to the Government. Numerous ore vessels were brought through the Welland Canal at Niagara Falls in sections and the sections re-joined. Such of these ships as were unsuitable for transatlantic service were placed in safer trades.

The Great Lakes became, moreover, the scene of an extensive special war enterprise in shipbuilding. In this district also the new hulls were rigidly standardized. The Great Lakes builders produced a ship of about 4,200 deadweight tons—the largest that could get through the Welland Canal. Many of these boats reached the Atlantic in time to be of service during the war. They were known as the "Lake" boats, and their names carried the prefix "Lake"—*Lake Arthur*, *Lake Clear*, *Lake Elsinore*, and so on. Most of the "Lake" boats, as they came from the builders, were assigned to the so-called cross-Channel fleet—that hardy and bustling trade which brought to the A. E. F. the Cardiff coal which it needed for its locomotives, power plants, stoves, and heating furnaces, as well as other military supplies furnished by England. For the most part the other ships in the cross-Channel fleet were obtained by charter from Sweden. The U-boats paid considerable attention to the American cross-Channel service; and more than one of the vessels launched in grimy harbors of the Great Lakes—in the New World, thousands of miles from the scenes

of conflict—came to grief in the English Channel and went down to join the bones of ships sunk in those historic waters in wars fought when America was only a wilderness.



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LINE OF SHIPWAYS AT HOG ISLAND

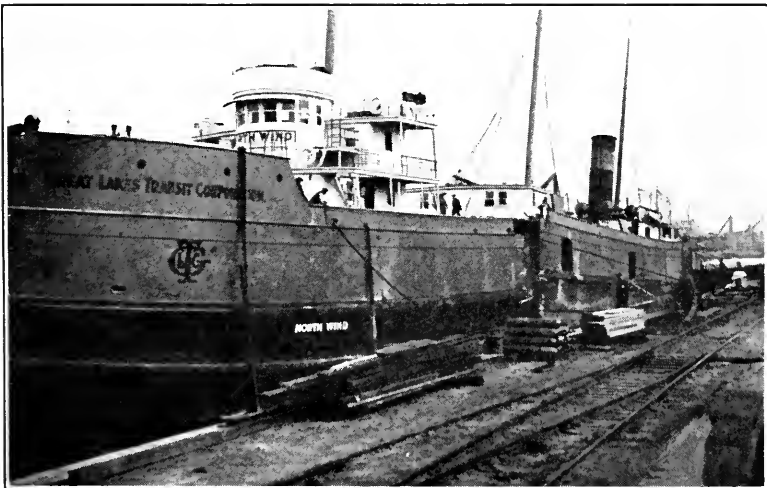


Photo by International Film Service

**GREAT LAKES STEAMER BEING CUT IN TWO FOR
PASSAGE TO OCEAN**

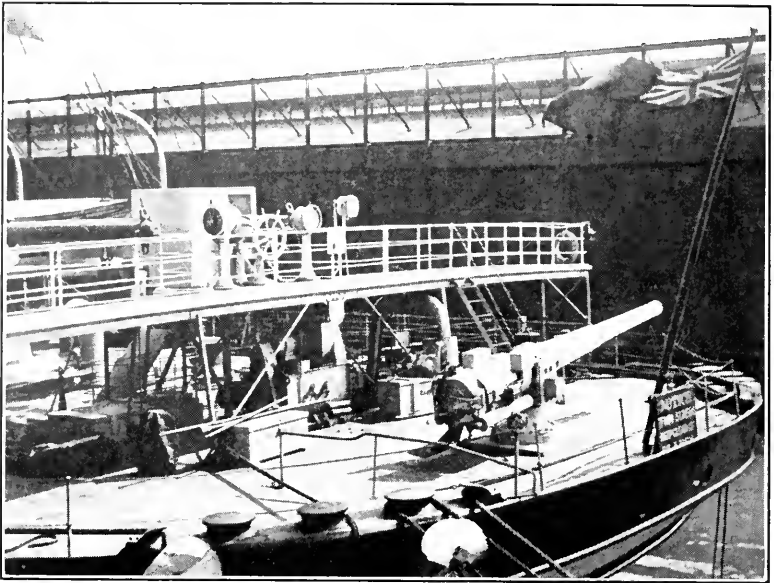


Photo by Western Newspaper Union

GUN PLATFORM AND GUN AT STERN OF TROOPSHIP



Photo by Signal Corps

**DUTCH SHIPS TIED UP IN NORTH RIVER, NEW YORK,
ON DAY OF SEIZURE**

CHAPTER XXV

THE ARMY'S QUEST FOR CARGO TONNAGE

IT might be assumed that, with 9,000,000 tons of shipping gathered together under the American flag, all the War Department had to do to build up its transport fleet was to pick and choose the best; for 9,000,000 tons deadweight would maintain a force several times the size of the A. E. F. But such an assumption would be far from the truth. The Embarkation Service had to battle for nearly every cargo ship it secured.

It contended for ships against the nation's other shipping needs, every one of which was an essential one. There was the New England coal trade, employing scores of ships between the lower Chesapeake rail terminals and the New England ports, to carry West Virginia coal to New England, the very heart of the nation's munitions industry. There was the Alaskan salmon pack that had to be brought down annually—another necessity. No doubt the sated palate of the overseas doughboy would willingly have spared from the ration the delicacy which he execrated as "goldfish"; nevertheless, the problem of feeding the A. E. F. would have been more difficult but for the national institution of tinned salmon. Then there was the sugar to be brought from Hawaii; and by a clever manipulation of shipping, the same fleet was used to bring down the Alaskan salmon in the summer and to ferry in the Hawaiian sugar during the winter months. There was sodium nitrate to be brought up from Chile—a supply without which our powder manufacture could scarcely have been the success it was. There was manganese to come from Brazil, iron ore from Cuba, chrome from the South Seas; and there were other imports almost as essential. Moreover, we could not cut off

the rest of the world entirely from American supplies; and this obligation, too, meant the use of vessels sorely needed for strictly military activities.

The Army fought for shipping against doughty antagonists. The nitrate and manganese imports were in the hands of Mr. Bernard M. Baruch, head of the powerful War Industries Board. And Mr. Herbert Hoover, of the Food Administration, was among the more insistent in his demands for tonnage.

The quest for ships resolved itself inevitably into a little domestic war within the general war, a drama unseen by the country. The struggle of various national interests for tonnage eventually almost disrupted the shipping enterprise; and it was not until the Shipping Control Committee took hold in early 1918, pooling the entire American-flag marine under one management, that the various essential interests could be successfully coördinated. The Shipping Control Committee must necessarily compromise and adjust the demands of the various appellants who sought its favor. It is perhaps the best commentary on the fairness of the Committee that not Mr. Baruch, nor Mr. Hoover, nor any one of the New England coal men, nor any of the others, was quite satisfied with its awards. As for the Embarkation Service, it always felt that it was not receiving the tonnage which should have been supplied.

The crusade of the Embarkation Service for ships began as soon as there was an Embarkation Service. In the early months of the war, all the government agencies which required tonnage sued for it before the Shipping Board. To hold its place in this contest, the Embarkation Service commissioned a shipping expert as an officer and posted him at the Shipping Board to select American-flag vessels suitable for the army convoys and pry them loose from other services. He continued at this work until the Shipping Control Committee began to operate the entire marine as a unit.

As soon as a cargo ship was assigned to the Army, it became the duty of the Embarkation Service to arm the vessel fore and aft. The Navy ruled that no transport, troop or cargo, should enter the war zone unarmed, and the Army followed

the rule almost to the letter. The arming of ships was an undertaking of sorts. The Navy supplied the specifications. Each gun had to be mounted on a special heavily built platform; frequently the decks and the deck supports underneath had to be strengthened. All this took time. In early 1918, when great numbers of cargo vessels were coming into the transport service and the A. E. F. was clamoring for supplies, the necessity of arming vessels became a vexation to the Embarkation Service, it meant such delay. The guns came principally from the permanent coast defenses, although the Navy supplied some of them. Private companies operating cargo transports under time-form charters required guns for their ships, too, and the War Department furnished the weapons. Toward the end it became apparent that the available supply of guns would be exhausted, and the Navy started to build guns especially for merchant ships.

A general criticism which might be applied to the embarkation enterprise in its earlier stages is that its executives failed to see clearly how big the war was going to be. At first the Army did not operate sufficient cargo tonnage to build up in France the reserves of supplies which the future forces were going to require. Later, when men of broader vision took hold, the Service was never able to secure what its officers regarded as sufficient tonnage, although it did receive every ship which the Shipping Control Committee could conscientiously withdraw from other uses. The Shipping Control Committee seemed afraid to grant all the tonnage requested by the Army, lest the day come when transports should lie in port without cargo there to fill them. That the War Department had never been able to build up at the ports the reserves of supplies which the Shipping Control Committee regarded as a condition precedent to a larger carrying fleet, was a true indictment. We had congestion at the ports, but never reserves—there was freight in abundance on the rails, but not at the piers. The military officials held the opinion, nevertheless, that even without reserves it would have been better to bring in ships to the army fleet in greater numbers; for with so restricted a tonnage the

Service had to employ every vessel continuously, with no time off for repairs or reconditioning. Had the war continued much longer, the country would have been let in for some disappointment in its troop fleet. The armistice found nearly all the ex-German passenger ships ripe for dry-docking and general overhauling.

Early in 1918 the United States Shipping Board began to yield more liberally to the requests of the Embarkation Service for cargo tonnage, and the monthly export figures began to mount rapidly. The Shipping Board obtained this additional tonnage by taking vessels out of the coastwise trade. The New England coal fleet was so decimated by the transfer that the New England manufacturers set up an outcry not to be disregarded. The Board then hastened to restore some of these quondam transports to the coal trade, where they remained until the new construction provided smaller ships to take their places.

In the earlier cargo convoys we sent certain small American coastwise ships to France, and General Pershing requisitioned them for his new-born cross-Channel fleet. The shipping scouts of the A. E. F. also discovered several American vessels in Spanish ports and took them for cross-Channel work. Whenever the A. E. F. kept a carrier, the act put upon the Embarkation Service the burden of securing equivalent tonnage for overseas use. Some of the smaller Danish ships also went into the cross-Channel fleet; and all of these, together with the Swedish and the Lake tonnage previously mentioned, built up a flotilla which at one time numbered eighty-three vessels.

Many of the expropriated Dutch ships—a total of 250,000 deadweight tons of them—went to the Army. The Embarkation Service obtained 94,000 tons of the purchased and chartered Japanese tonnage. To the Army, however, the chief benefit in the heavy charter of foreign tonnage lay in the fact that those marine increments allowed the release of suitable cargo boats from other activities. Part of the army cargo fleet came by transfer from the South American coast trades and from the Gulf and Caribbean routes. It was hardest of all for the

Army to pry ships out of the South American west coast and the transpacific trades.

In the work of allocating tonnage, the statistician came into his own. It was principally upon the representations of statistics that any official service was able to secure bottoms. The Embarkation Service maintained an extensive statistics branch. One of its feats was to analyze Pacific Ocean trade and shipping. This analysis educed the conclusion that 637,000 deadweight tons, including foreign-flag ships, would take care of every essential need of American interests. In July, 1918, there were over 1,250,000 deadweight tons in the Pacific. On the showing made by the Embarkation Service, the Shipping Control Committee pulled out over 100,000 deadweight tons. But in spite of that withdrawal, the total tonnage in the Pacific continued to increase until, in the autumn of 1918, it reached 1,595,000 tons. Whence this growth? It is true that the Japanese were launching new ships and putting them into the Pacific trades; yet the new Japanese tonnage was not nearly enough to account for the increase. Our people suspected that the British were slipping vessels into the Pacific for the benefit of British foreign trade, although we had no concrete evidence to sustain that suspicion. Later on we shall see how the British, in turn, questioned the complete *bona fides* of the United States in the world shipping situation. In fact, each co-belligerent kept a wary eye on the other, lest its partner in war yield to trade temptations, to the sacrifice of its purely military effort at sea.

In late September, 1918, both sides brought their suspicions to the meeting of the Interallied Maritime Transport Council in London. In the confidential sessions there, when evidences of ill feeling arose, the Chief of the Embarkation Service, General Hines, who attended as one of the American delegation, remarked that the English and the Americans, in such a life-and-death war as they were committed to, should "act like partners, not competitors." It was a saying which seemed to clear the atmosphere. Comity between the shipping men of England and the United States existed thereafter to the end.

This meeting of the Interallied Maritime Transport Council—it took place on September 30, 1918—was one of the most momentous conferences in our war history. In July we had adopted the so-called eighty-division program for the A. E. F.—a project to place nearly 4,000,000 men in France by the end of June, 1919. In support of the program the Shipping Control Committee had scaled to a minimum the tonnage in all other American salt-water trades; yet the overseas supply service still lacked several hundred thousand of the deadweight tons necessary to the maintenance of such a force. Accordingly, Secretary Baker and General Hines went to London and asked the Maritime Council to relinquish a great weight of Allied cargo tonnage to the American Army. They did it at a time when the Allies could not safely spare a single vessel.

The decision of the Council to supply the tonnage and save the American eighty-division program, at the cost of the proper nourishment of millions of Europeans already underfed, was one of the most colossal gambles taken in the war. As a piece of sportsmanship, nothing in the latter part of the war compared with it; not even the desperate eleventh-hour decision of the German Government to throw its navy against the overpowering fleets of the Allies, on the outside chance that a victory might turn the tide which was running so strongly against Germany. Germany had nothing to lose: the Allies were winning, and, if the chance they took were to go against them, it would turn their victory into defeat.

This was the proposition:

All the nations were making plans for another year of warfare. The Argonne-Meuse offensive had as yet scarcely begun; even the most optimistic thought it likely that the fighting would go on into 1919. The Allies had placed their hope in America. To draw as lightly as possible upon the transatlantic shipping and leave to America every ton of it that could be relinquished, they had pared down to a minimum their import requirements for the coming twelve months. England, France, and Italy had each set, for food importations, a figure regarded as the lowest which could maintain health and morale. Each

of the three armies had figured to the irreducible minimum the munitions it should have to import. And then we stepped forward and asked them to lop 2,000,000 tons off these estimates. We asked for shipping which would carry that weight of cargo to them in a year of operation. We asked them to eat 2,000,000 tons of food less than the hard-won minimum obtained by the most severe rationing they had yet known. Either that, or they were to cut 2,000,000 tons from their munitions requirements, or, perhaps, divide the 2,000,000-ton deficit between food and munitions. To be sure, we had the plain right to ask this sacrifice; for when the British transported the first six divisions of American troops to be brigaded with the B. E. F., it was the understanding that later they should give us some supporting cargo tonnage.

And what would we do in return? In the first place, their sacrifice would enable us to build the A. E. F. at once to eighty divisions, with the necessary supplies. This force might end the war in a hurry and thereby save the entire situation. If it did not, then by spring, 1919, we expected our own shipbuilding to catch up with our military program, to give us the ships to support eighty divisions with a comfortable tonnage surplus over. Then, with Europe's meal barrel scraped clean and her cruse of oil dry, we would turn to with our excess shipping—even adding some of our cargo transports if necessary—and fully repay the ship loan, the 2,000,000 cargo-tons, by sending food, food, food, powder and shell and gun steel, until Europe's reserves were again raised above the danger level. That would give us our eighty divisions and their supplies in France, and the Allies their rations and munitions, too.

The trouble was that we had no sound figures to back up these promises. The estimate left no margin for disappointments, unforeseen, but almost bound to occur.

The astute banker lends money more upon the character of the borrower than upon his visible assets. So it was with the Interallied Maritime Transport Council—and that means England, for the shipping in the interallied pool was preponderantly British. England bet on us, on our spirit and determina-

tion, on our ability to come through clean when every condition seemed to be against us; and she bet, not money or ships merely, but the independent existence of herself and the other Allies.

The voyaging soldier saw only the externals of the transportation system. Yet even his superficial contact with it showed him its professional *finesse*. What he and all but a few Americans did not know, at the time, was that the men who had created the transportation system were occupied not so much with its day-to-day operation as with the external plans for its future expansion. Indeed, perhaps the chief contributions of the executives at the head of the Embarkation Service to the success of American arms were the minute analyses of the shipping situation which they made from time to time. On these analyses rested the whole plan for the increase of the American Army. They were the foundation of the decision to adopt the eighty-division program.

By July, 1918, we had astonished ourselves—and the world—by the rate at which we could train troops and send them to France; we had gone, in fact, beyond the most sanguine hopes of A. E. F. headquarters. The Government began fixing the goal for the coming twelve months. Three plans were advanced tentatively:

One called for an expeditionary force of sixty combat divisions in France by the end of June, 1919. Estimating a division (plus corps and army troops) as a force of 30,000 men, and providing for each overseas division 10,000 troops for the Services of Supply, this meant a total of 2,400,000 Americans in France by the end of the program year, not to mention the overseas shipment of more than half a million replacement troops, half of which were regarded in this cold-blooded estimating as sheer waste.

The second plan—the eighty-division program—called for 3,200,000 troops in the A. E. F. by the end of the year, in addition to 700,000 troops shipped as replacements.

The third program called for a hundred combat divisions. That meant the presence in France of 4,000,000 Yankee sol-

diers by the end of the twelvemonth, and an additional 1,000,000 replacement troops.

The hundred-division program was the ambition of General Pershing and of A. E. F. headquarters. The moderates at Washington urged the sixty-division program. The Government adopted the eighty-division program, which was somewhat greater than all the supply and transport facilities in sight could maintain. It was adopted in the faith that in some way we should be able to meet its exigencies.

Now, the actual transportation of the troops themselves, the 3,900,000 soldiers of the program, offered no insurmountable difficulty. Indeed, by continuing the British passenger liners in our transport service and perhaps scraping up some additional foreign vessels, we might even have started out confidently on a hundred-division program, so far as the actual overseas transportation of the men was concerned. The limiting factor was not troopships, but cargo carriers. Even when General Pershing had cut down the estimated needs of the A. E. F. to thirty pounds of supplies *per capita per diem*, which was far under the consumption by American troops in the past, the available cargo tonnage fell short of the eighty-division requirements by some 1,200,000 deadweight vessel-tons.

General Hines took to the London meeting his statistical analysis of America's tonnage position. It showed that we had put into our transport service every new vessel built in an American shipyard and that we would continue to do so; also that we were withdrawing from our import trades and our coastwise traffic every suitable ship that could be spared without reducing our importations of essential war commodities below the danger point. The schedule showed that, with every available American ton of shipping put into the cargo convoys, we were falling behind the eighty-division supply schedule by several hundred thousand deadweight ship-tons a month. This in the summer of 1918. The deficit would grow smaller month by month, as our yards launched more hulls, until, in March, 1919, it would pinch out altogether and become a small surplus, which in turn would grow until, in July, 1919, we should

have 1,000,000 more tons than we should need to support the eighty divisions.

Thus, the peculiarity of the shipping deficit was that it occurred entirely in the former half of the program year. But we must ship supplies at a steady and growing rate month by month: we could not postpone shipments until the day when we became wealthy in tonnage. A loan of 1,200,000 Allied deadweight tons would tide us over until late winter, when we should be able to repay the loan with our own new ships. On the other hand, as General Hines pointed out, there was no urgent need for the Allies to distribute their food importations evenly throughout the program year. The European crops at that moment were being harvested, and the cereal crop in particular was an abundant one. Let the Allies eat their own crops first. That supply would carry them along until the late winter, the period of consumption exactly coinciding with the period of greatest shortage in the American army tonnage. Then by March, with our own supply problem solved, our cargo ships could concentrate on freighting the American food exports to Europe. American wheat would begin to arrive in Europe just when the European crop had been eaten up.

Back in December, 1917, when the American Mission headed by Colonel E. M. House was in England and France arranging for war coöperation between the Allies and the United States, the Interallied Maritime Transport Council was formed; and some rash soul on the American delegation promised complete American participation in the affairs of the Council. This meant that all American cargo ships should be thrown into the general pool and allocated by the Council. Each nation represented in the Council agreed, furthermore, to submit to the body for approval its program of imports and to import nothing of which the Council disapproved. Although the Allies never forgot this promise, the American Shipping Control Committee quietly ignored it. Our problems were too peculiar, and we were too far away from London, to allow Europe to allocate our ships. Incidentally, we neglected to tell the Council what we were importing for our own use. In consequence, the



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LAUNCHING OF A "WEST" SHIP

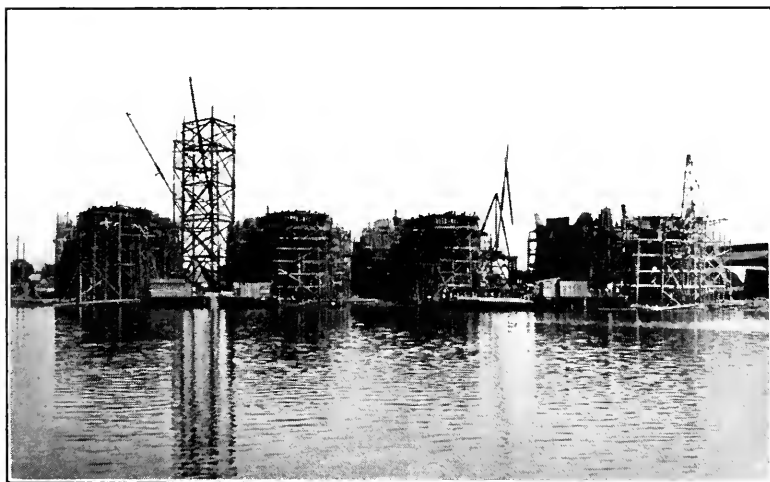


Photo by Burgert Bros.

WOODEN SHIPS BUILDING AT TAMPA, FLORIDA



From The War College Collection

A NEW CARGO TRANSPORT TAKES THE WATER



Photo by Overhey's Studio

A NEW CARGO CARRIER CAMOUFLAGED

British members of the Council, and perhaps some of the others as well, brought to the meeting minds in which lurked the suspicion that, using the pretext of our need for nitrates and manganese, we might be sending cargo ships to South America to seize the commercial foreign trade that once had gone to England, France, and Italy. General Hines's clear analysis had showed incontrovertibly how unfounded was this suspicion. But if any such thoughts remained in the Council, they were dispelled by the speech of Secretary Baker, who promised that henceforth America would lay her cards on the table and keep the Maritime Council constantly informed of her import programs.

It is important to note, however, that the Secretary of War did not agree to allow the Council to manage American shipping. On the contrary, he plainly told the meeting that, if the unforeseen happened and we were unable to pay back the tonnage lent to us, as in all good faith we meant to do, then it would be a case of devil take the hindmost, and we would look out for the A. E. F. first.

The Council accepted the conditions. The walls of prejudice crumbled, and the two Americans got what they went for. The Council issued an appeal to the people of the Allies to make even greater sacrifices and hold out until spring, when their position in respect to supplies would "in all probability" be much improved. And it furnished the ships; the concrete evidence was the upward leap in army supply shipments in October and November, 1918. Then the armistice happily ended a situation full of dramatic possibilities.

Now, the whole Hines estimate of what we expected to be able to do in shipping perched on a shaky scaffold of *if's*. We could maintain our eighty divisions in France, get along temporarily with the loan of 1,200,000 tons of Allied shipping, pay it back in the spring, and take to Europe her postponed food imports—if our shipyards delivered the ships promised, *if* we improved the efficiency of operation of our cargo fleet, *if* the A. E. F. tidewater bases in France improved so that they could unload ships and send them out again in fourteen days, *if* the

submarine interference grew no worse, *if* it became no harder to secure crews for ships in our essential coastwise and import trades, *if* the ports in the United States cut down their vessel-loading time, *if* there arose no difficulty in securing bunker coal in the United States.

There was no certainty about any of it. Consider the ship-building, for instance. One of the most precarious of all terrestrial occupations is predicting what shipyards will do. General Hines's estimate was based on figures submitted to him by the Shipping Control Committee, which had arrived at its conclusion by taking the predictions of the United States Shipping Board and discounting them fifty per cent. As a matter of fact, the American launchings after November, 1918, never came up to the figures in the estimate, although we must take into retrospective consideration the general let-down in industrial morale after the armistice.

The estimate further assumed that, in order to fulfill the obligation, the French ports would begin to discharge freight from cargo vessels 2.7 times as fast as they had ever done up to that time. In September, 1918, the French ports could unload 981,000 tons of A. E. F. supplies a month. The eighty-division program required them to discharge 2,000,000 tons in January, 1919, and to expand in capacity after that.

It was growing more and more difficult to get crews for American ships in coastwise and import trades, because of our increasing tonnage. The estimate demanded an increased coal production from mines already vomiting forth coal as never before. The hypothesis assumed that there would be no such interference with railroad traffic as had been caused by the severe winter of 1917-1918.

Having surveyed the *if's*, let us look at one or two of the *suppose's*. *Suppose* there had been a general labor strike in the shipyards or in the industries which supplied the yards. That would have upset the calculations. Storms and floods might have set back the undertaking. The Germans might suddenly have discovered some way to increase sinkings greatly. That contingency would have set the estimate at naught. *Suppose*

Germany, as our Government always feared she might do, had adopted the policy of sending out a cruiser or two each month, bidding them good-bye forever, but hoping that an occasional one might slip through the blockade and win to the open Atlantic to harry the American troop and cargo convoys. The mere knowledge that Germany had adopted such a policy would have forced us, by convoying with battleships, to slow down the overseas turn-around of our ships at least thirty per cent—the equivalent of sinking outright a third of the American tonnage. We kept a force of American battleships continuously in a southwestern Irish harbor, ready to meet just such a situation.

In any one of these contingencies, the eighty-division program might have come to a disastrous end. America would have had in France a force which, with every shipping resource, she would have been unable to supply. Europe's food bins would have become empty because she had spent the fall and winter carrying American army cargo. And with a combined American and Allied force on French soil far superior in numbers to the German army, and at sea a combined battle fleet that outweighed Germany's three or four to one, the only solution would seem to be surrender on Germany's terms—unless, as we all have faith to believe, American determination could in some unforeseen way have surmounted even such difficulties.

Yes, the decision of the Maritime Council on the 1st day of October, 1918, was one of the war's most stupendous gambles. It was also one of the most brilliant achievements in the administration of the American Army.

CHAPTER XXVI

THE SHIPPING CONTROL COMMITTEE

THE early days of 1918 were dark days in the War Department. Our ocean shipping was not performing the service expected of it. Army exports refused to increase in volume. Cargo was not going across in satisfactory quantities, although every day was witnessing an improvement in railway traffic conditions.

The Government was still operating its ocean tonnage on a plan that might be called the system of grab-and-hang-on—

“—the simple plan
That they should take who have the power,
And they should keep who can.”

The familiar lines fairly well sum up the ocean shipping situation as it then was. One or another of the government agencies got its hands on such vessels as it could obtain, and, once possessing them, clung grimly. The United States Shipping Board was the source of all tonnage. The Board listened to the arguments and pleadings of the Embarkation Service, the War Industries Board, the Food Administration, the New England coal men, and the others, and then allotted vessels to these interests as it deemed best. Once a ship went into a service, it was likely to remain there. Services with the most crying needs for greater tonnage maintained departments whose sole work was to obtain vessels. The less essential interests were content if they could cling to what they had.

This system rode on toward ruin. If there had been enough tonnage for all, no particular harm need have come from the grab plan; but there was not enough. Rake and scrape as we

did, bring under American control by charter and purchase all of the procurable merchant vessels of the earth, we were able to secure about one-third as much tonnage as we actually needed in all our essential war activities.

The struggle for tonnage by half a dozen independent trades and fleets ended only with the creation of the Shipping Control Committee. The Shipping Control Committee solved the whole tonnage problem, and did it in a hurry. It made a merchant fleet one-third as large as we really needed perform every essential task.

The success of this body was primarily due neither to its personnel nor to its form of organization; although the latter was admirable, and of the former Mr. P. A. S. Franklin, chairman of the Committee and, in private life, president of the largest American ocean shipping corporation, said in a valedictory letter addressed to the organization: "It is doubted whether any more efficient and capable a staff has ever been engaged in any one enterprise." Its success rested upon deeper foundations. It reached down to the Committee's basic theory of operation, its charter of existence. As soon as the Shipping Control Committee was organized, the various government shipping agencies gave up the fleets which they had so laboriously gathered together and threw them into a general pool. This pool, the entire American merchant marine, the Shipping Control Committee operated exactly as a private company would operate its own property, moving ships wheresoever there was essential cargo to be lifted. The government tonnage had hitherto been rigid: the Shipping Control Committee made it liquid—a change which made all the difference in the world to the efficiency of the American marine.

The Shipping Control Committee came out of the Government's regular Wednesday shipping meetings. From the day on which the first convoy moved out of New York until the armistice was declared, the weekly shipping meetings in Washington were regarded as quite the most important of the war conferences. Washington allowed nothing to postpone or disturb any of these meetings. Ocean tonnage was the key to our

whole military situation. Our power at the front was absolutely determined by the amount of tonnage which we could operate effectively; but ocean ships were not to be materialized by the wave of a magician's wand. Therefore the search for available tonnage, and the management of it after it came under the American flag, were matters which deeply concerned the chief officials of the Government.

To the Wednesday shipping meetings came the chairman of the United States Shipping Board, the chief army and navy officials, and the heads of the various boards, administrations, and war bureaus which had essential cargo to move. The Secretary of War was *ex-officio* chairman of the meetings; whenever other duties demanded his presence elsewhere, as they frequently did, the Assistant Secretary of War presided. The shipping representatives of the Allies usually attended the meetings; so also did certain eminent American shipping men, acting as voluntary advisers to the Government in its management of vessels and trades. In this last class was Mr. Franklin, president of the International Mercantile Marine Company, which operated the White Star, Red Star, American, and other famous lines of transatlantic passenger and freight vessels.

The Shipping Control Committee was born suddenly and dramatically. One Wednesday morning in late January, 1918, Mr. Franklin arrived in Washington as usual. Finding an hour at his disposal before the shipping meeting would begin, he took the opportunity to call upon Major General Goethals, the Quartermaster General. At General Goethals's office he found the Secretary of War and Mr. Edward N. Hurley, the chairman of the United States Shipping Board. The three men were worried. No need for Mr. Franklin to ask why: the shipping situation was getting out of hand. The Secretary of War had come to the conclusion that the fault lay fundamentally in the system of administration, and he asked Mr. Franklin for his opinion. Mr. Franklin at once proceeded to outline a preconceived plan to pool and liquidize the entire ocean marine under a single management. The Secretary of War accepted the plan forthwith; Mr. Hurley also acceded to it. Then and

there the two executives orally created the Shipping Control Committee by name and conferred upon Mr. Franklin the direction of it, he accepting the responsibility with as little formality. The executive decision which lifted the American war effort over the crest of the struggle against adverse conditions was taken inside an hour.

Of course, the question occurs to the reader, Why wasn't this done a lot earlier? And, equally of course, the answer is, It should have been. Yet one should remember that the various government branches were all struggling with their own special problems; and this concentration of an executive upon matters directly in front of him, together with his natural inclination not to meddle in the affairs of others, restricted his vision. It took an outsider like Mr. Franklin, who could view the whole shipping situation, to see what was wrong; and it took a man of his broad experience and ability to find the solution, once he had put his finger on the difficulty. Also, to make his remedy of any avail, it needed men in the Government able to grasp the plan quickly and willing to surrender their own powers and accomplish a reform without that long deliberation which so often passes for wisdom in high places.

The oral creation of the Shipping Control Committee was formally ratified by official correspondence in early February; by which time Mr. Franklin had returned to New York, built up his preliminary organization, and occupied quarters at No. 45 Broadway, the former office building of the Hamburg-American Line. The Army ceded its cargo fleet outright to the Shipping Control Committee. The United States Shipping Board surrendered only the *control* of its cargo vessels, which constituted the rest of the American cargo-carrying marine. The troopships, except about twelve, remained in the control of the Navy.

The activities of the Shipping Control Committee, therefore, were twofold:

1. It had complete charge of the operation of all army cargo transports. It repaired and kept up the vessels, provided crews for them, directed loading and stevedoring, acted as fleet

chandler, and in general managed them precisely as a private company operates its own ships. The Embarkation Service had done all this work; and in certain branches of the port establishments at New York and Newport News, the Shipping Control Committee found a staff ready trained to the job.

2. The Committee acted as agent of the Shipping Board in allocating shipping-board tonnage to various trades and ocean routes. In this function it controlled the movements of vessels, but not their individual operation—the Shipping Board itself, or else the private owners of vessels which were under time-form charter to the Shipping Board, continued the actual physical operation of the tonnage. In its formal resolutions ratifying the creation of the Shipping Control Committee, the Shipping Board expressly reserved to itself the exclusive right to requisition ships, control freight rates, and acquire tonnage by purchase or charter.

In all, the vessels brought under the jurisdiction of the Shipping Control Committee were nearly 1,400 in number, with a capacity of over 7,000,000 deadweight tons—the largest fleet ever operated under a single executive direction.

Two other men were named as members of the Shipping Control Committee—Mr. H. H. Raymond, of the Clyde and Mallory Lines, and Sir Connop Guthrie, K. B. E., who represented the British Ministry of Shipping in its contact with the United States Shipping Board. All three members served without remuneration except the statutory dollar a year.

In form a board, actually the Shipping Control Committee was a one-man organization, just as the scientific control of ocean shipping was a one-man job. From the 1st of February, 1918, until the end of the calendar year, Mr. Franklin himself was the supreme dictator of American cargo tonnage of every sort. Mr. Raymond, acting as his assistant, was of great service; he brought to the Committee an experience of shipping matters second only to that of Mr. Franklin himself. Sir Connop Guthrie took no part in the control of our tonnage except as that control was modified and influenced by the operation of the British tonnage. He acted as the liaison be-

tween the British and American merchant marines for the most efficient employment of both to the single end of victory over Germany.

Until the creation of the Shipping Control Committee, the various fleets operating in our essential export and import trades were fixed and rigid affairs. Each service knew to a ton what carrying capacity it had at its disposal, knew the names of the vessels in its fleet, their appearance, capacity, and best performances, and regarded them all with a fond possessive eye. As soon as the Shipping Control Committee took hold, all these fleets were pooled. It was with consternation that certain interests saw familiar ships disappear from their services; and they went instantly to the Shipping Control Committee to enter protest. Then it was that Mr. Franklin took occasion to explain something of the new theory of operation.

“Quit talking about blue ships and green ships and black ships,” he would say. “What difference does it make to you what vessels go into your service, so long as vessels go there? Your chief concern seems to be that the ships you have known must remain in your trade. You have had blue ships up to now, and so you want nothing but blue ships in the future. Stop thinking about blue ships and green ships, and tell me how many tons of freight you have to move, and I will move it if it is humanly possible to do so. But pay no attention to the ships I use. They will be the ones most available at the time.”

In spite of this advice, it was weeks before the various official interests understood what the Shipping Control Committee was driving at. They had grown so used to thinking of their shipping problems in specific terms of the actual vessels at their disposal, that it was difficult to get them to accept the principle of liquid tonnage—to think in general vessel capacity rather than in particular ships. But as often as Mr. Hoover, or Mr. Baruch, or any of the others, came to ask for certain vessels, Mr. Franklin gave another of his discourses about blue ships, until presently they were all willing to let him move their cargoes in such vessels as it was convenient to

employ. Only by such a method could a cargo fleet one-third large enough be made to carry the essential commerce.

The creation of the Shipping Control Committee ended the struggle of the government agencies to take ships from each other and from the Shipping Board. These organizations disbanded their vessel-procurement departments and thereafter placed before the Shipping Control Committee only their statements of cargo which had to be moved.

The Shipping Control Committee could not move all the cargo. The best it could do with its facilities was to make a fair compromise—to freight enough of each class of commodities to keep everything going. It took the army cargo to France, not perhaps in such quantities as the Army would have wished (although it placed the army needs above all others), but in sufficient quantities to guarantee that the A. E. F. should not be starved of essential supplies. At the same time it brought from Chile nitrates for our powder plants, from Brazil and Cuba manganese for our high-speed steels, from Africa mahogany for our airplane propellers, from New Caledonia chrome for our war-stimulated leather industry. It sent coal to Brazil, Argentine, and Chile, for even our own supreme need of fuel could not deny coal supplies to South America; but the Committee transported this fuel in vessels which were to return to the United States with essential cargoes. It brought sugar from Cuba for our own nutriment and that of Europe, and it freighted across the Atlantic the European sugar supplies, together with other essential foodstuffs. It carried fuel to the Panama Canal for the bunkering of vessels at that point. It maintained New England's coal supply by the operation of coal boats coastwise from Chesapeake Bay. It brought hides and wool from South America and the Orient. It freighted oil to the British Navy. It brought in sisal and hemp from Mexico and the Philippine Islands and coffee from Brazil and Central America. It did not move any of this tonnage in as great quantities as the various interests might have wished, but it moved far more of it than the old system could have done. The Committee was able to maintain every essential trade, not by



Photo by Signal Corps

ARMY CARGO BASE AT PORT NEWARK, NEW JERSEY

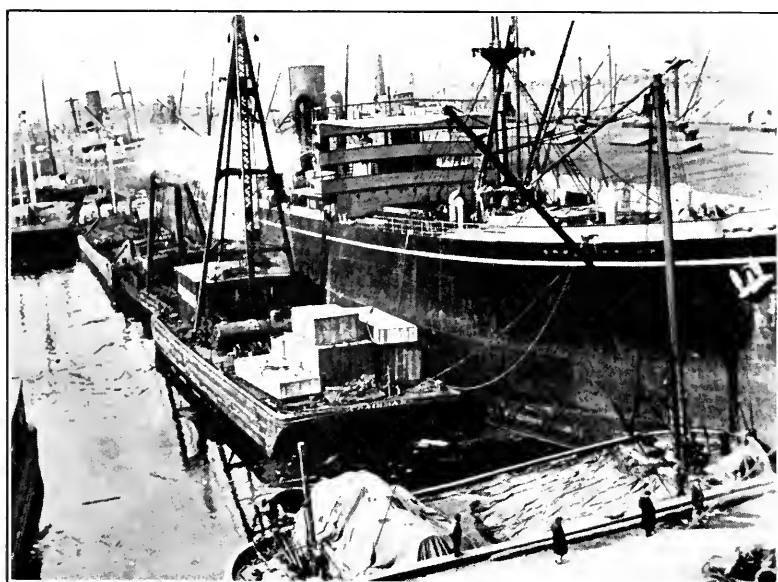
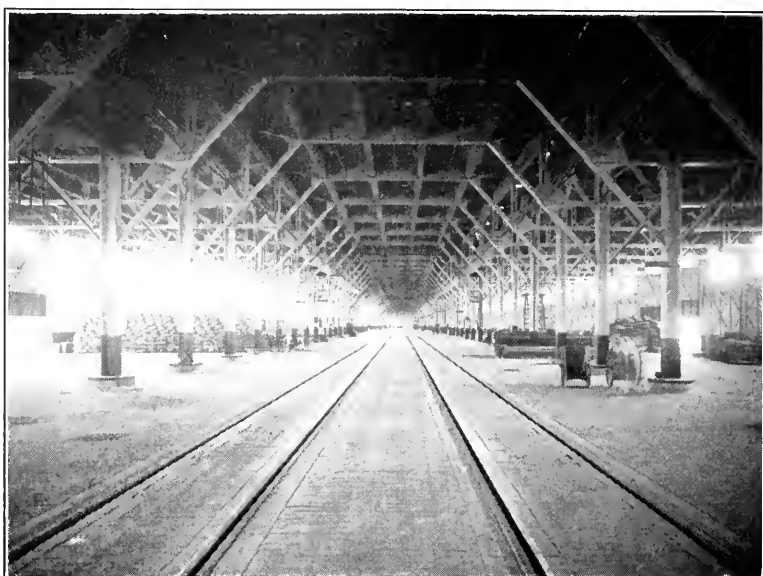


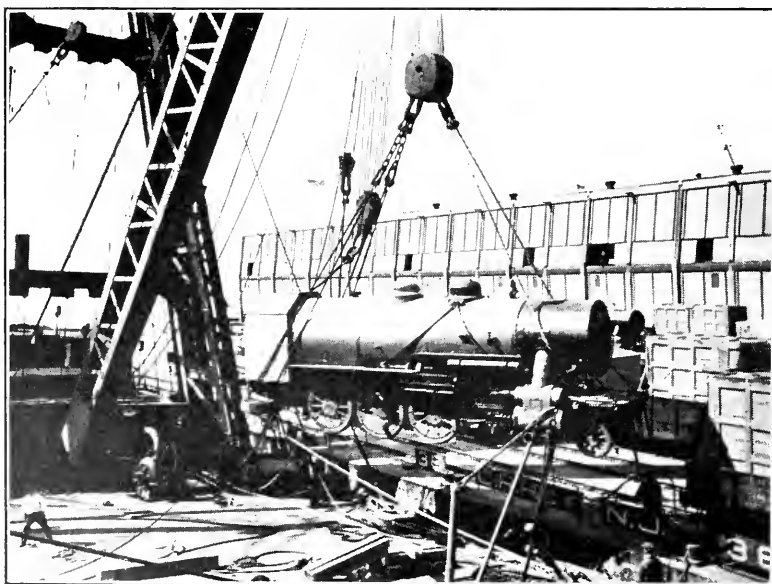
Photo by Kadel & Herbert

**CARGO TRANSPORTS LOADING AT ARMY DOCK,
BROOKLYN**



From The War College Collection

INTERIOR OF AN ARMY CARGO PIER, BROOKLYN



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**LOADING LOCOMOTIVE ON WHEELS INTO CARGO
TRANSPORT**

assigning ships more or less permanently to those trades, but by making the tonnage liquid and operating it to the best advantage of the United States as a whole.

The familiar instance of the Pacific coast grain ships operating in the Allied food supply, an episode related before, showed the advantage of liquid tonnage. The arrangement whereby these ships carried their cargoes directly to their European destinations, while the British Ministry of Shipping assigned to us Allied ships, ton for ton, to replace the temporary loan, was made by the Shipping Control Committee through its liaison member, Sir Connop Guthrie.

And this is only illustrative of what went on everywhere, as soon as we were able to operate our entire merchant fleet as a unit. When our vessels had brought in a just quantity of Cuban sugar, the Committee placed the erstwhile sugar ships in other services which had paramount need of them. When the Committee judged that the fleet had done enough for the nitrate trade, boats were withdrawn and assigned to meet some other critical situation; and so the manipulation continued, the tonnage flowing as if by gravity to the places of greatest need.

The fact was that America was shorter in tonnage than any outsider ever imagined. We could no longer measure our shipping position by any mere statement of vessel-tons available. The American demand for ocean freighting had been so expanded by the war that the old notion of what was vast shipping capacity meant little to us. The available tonnage was much further below the requirements than any but a few men ever knew. Even the Allies allowed themselves to be deceived as to our position, for they could scarcely comprehend the reach of our war industrial program and the burden it placed upon our import commerce. They looked at our force in France, estimated its shipping needs, viewed the figures of shipping which we had placed at its disposal, noted the total figures of American tonnage, and decided among themselves that we were not doing the right thing by our military freighting.

The British maintained that we kept too many ships in, for

instance, the South American trade, the implication being that we were protecting our purely commercial foreign trade at the expense of our military supply system. The fact was that the Shipping Control Committee never at any time allocated vessels to protect American trade interests or to usurp foreign trade dropped by the Allies. In our South American trades we placed for the most part only vessels which were below convoy speed or otherwise without war-zone privileges. It is true that these vessels, on their outbound voyages, carried considerable purely commercial cargo to private consignees in South America; but if they had not loaded this cargo they would have sailed empty, and the South American cargo would have stacked up in New York and created congestion there.

The Shipping Control Committee continued the work of the Embarkation Service in improving the turn-around or transatlantic cycle of the army cargo vessels. To cut, even by a day, the time it used up to load a ship in New York, take her across the ocean, discharge her cargo in France, and return her to the United States, meant adding just so much to the carrying capacity of the army cargo fleet. An improvement of thirty per cent in the turn-around was the same as creating new cargo capacity equal to thirty per cent of that of the fleet. The average turn-around of our cargo transports was at its most discouraging point in November, 1917, when the effective average was 109 days. Of this average, forty-three days were spent in port in America. In December the new organization of the Embarkation Service tackled the problem in earnest, and the average stay in a home port dropped to twenty-two days; in January there was a still further reduction to sixteen days. This average, equaled again in April, was the lowest attained in our embarkation history. In the summer and fall of 1918 the period lengthened somewhat, because of the great growth of the army fleet and the consequent necessity for ships to take their turns at the docks; but it never went above twenty-seven days.

The Shipping Control Committee drew the best civilian specialists it could obtain from the American shipping indus-

try and placed them in charge of its major activities. The chief military figure in the organization was Major Cletus Keating, a New York admiralty lawyer commissioned in the Quartermaster Corps. He acted as secretary to the Committee and executive officer of its organization. The operation of the army cargo fleet was in the hands of two principal executives. One of these was Mr. John H. Thomas, who was given the title of Director of Shipping at the port of New York. He was in general charge of the loading, repair, and dispatch of all cargo transports, and his work included the operation of the harbor floating equipment required in the loading and fueling of the vessels. He was assisted by Mr. A. Houtman and Mr. W. W. Jeffries.

Mr. Houtman was the father of one of the most novel and celebrated enterprises in the history of transoceanic commerce: namely, the shipment to the A. E. F. of American locomotives on their wheels. It came to the attention of the American authorities that the British Army was using car-ferries for the cross-Channel shipment of English locomotives to the army railroads in France. Our locomotives had to be shipped in parts; and the time consumed in assembling them in France was holding back the development of the A. E. F.'s railway transportation system, which in turn limited the rate at which our French ports could discharge freight. On Mr. Houtman's suggestion, it was decided to ship our locomotives on their wheels, if only it could be done. It was wasteful of ship space, but economical of time. The first thought was to secure from the Florida East Coast Railroad the car-ferry operating between Key West, Florida, and Havana, Cuba. A practical examination of this open-ended vessel disclosed that she was unsuited to service in the rough waters of the Atlantic. But in the shipping board fleet were a number of new ships designed and constructed originally for the Bethlehem Steel Company's use in bringing Cuban ore to the United States. These ships had been requisitioned during construction by the Shipping Board. Three or four of them—the *Feltore*, the *Cubore*, and others—were in commission in the summer of 1918, and sev-

eral more were soon to come from the shipyards. The ore vessels possessed double hatches through which a locomotive could pass horizontally. The Shipping Control Committee took these ships and stacked assembled locomotives in them as if they were barrels of china, bracing and packing them in with bales of hay doubly compressed.

Under Mr. Thomas were a half dozen or more harbor activities connected with the operation of the army fleet, nearly all of them in charge of commissioned officers. Major Cushing had direct control of the loading of ships. He laid out the loading plans, an important function in shipping. The fleet ship-doctor was Lieutenant Colonel R. A. McCabe, head of the division of maintenance and repair, which refitted and repaired the transports. Mr. W. F. Gibbs acted as chief naval architect for the Committee. Mr. Gibbs had been chief constructor of the International Mercantile Marine Company. Major O'Brien was boss of stevedores.

The other chief officer in the operation of the army cargo fleet was Joseph T. Lilly, who, it will be remembered, acted for a week in January, 1918, as Chief of the Embarkation Service. Mr. Lilly was appointed the Committee's director of shipping at the so-called outports—Baltimore, Philadelphia, Boston, Jacksonville, Savannah, Charleston, Brunswick (Georgia), Newport News, Norfolk, the Gulf ports, and the ports on the Pacific coast. At each of these seaports there was a local director of shipping who was responsible directly to Mr. Lilly.

The management of the shipping board fleet was in the hands of Mr. W. J. Love, director of the division of allocation and trades. The non-military movements were divided into three groups—one for South America and the West Indies, one for transatlantic and transpacific projects, and one for coastwise coal. These fell under the direction of Mr. Love, as did also the operation of American sailing vessels.

In matters of policy Mr. Franklin was assisted by Mr. J. Parker Kirlin, who was appointed general counsel for the

Shipping Control Committee. Mr. Kirlin is well known as the dean of the American admiralty bar.

The allocation of tank steamers was a special activity under Mr. W. H. A. Walker. At least half our tank tonnage was assigned to the British trade, because the British Grand Fleet was largely dependent upon American oil. Occasionally the Committee used a tanker in the transportation of bulk molasses from New Orleans.

The Committee's inviolate policy was to take care of army cargo first and commercial cargo afterwards. It was Mr. Love's duty to take from the essential commercial trades every vessel suitable for convoy service, assigning other tonnage to the less exacting routes. The executives watched constantly to see that they did not send across the Atlantic so many ships that they would cause delay by congesting French ports. The whole shipping situation, in short, had to be adjusted to the best interests of all, so far as these were compatible with the needs of the Army.

The director of this great operation kept in touch with the constantly shifting world tonnage situation, as well as with our own shipping progress. In order that he might have his figures in concrete and striking form, Mr. Love, Mr. Lilly, and Mr. Gibbs constituted themselves an informal board of statistics and made up charts which showed to a ton what shipping would sail in every trade every month, and where the United States stood in relation to the world tonnage situation. These tables Mr. Franklin took with him to the weekly shipping meetings in Washington, where the essential interests examined them as the basis for their own intra-bureau priorities. It is noteworthy that in no single month did the Shipping Control Committee fail to live up to the tonnage promises of these tables.

The work of the Shipping Control Committee met with complete coöperation in Washington. With anything less than the sincere backing which it received from the Secretary and Assistant Secretary of War, or with a disposition in the army command to resent the Committee's control of the transport

fleet, a different story might have been told. The personnel of the Committee included most of the greatest American experts in ocean shipping, and in addition there were nearly 4,000 employees in the organization, all of them, from the humblest office boy up to the chairman himself, realizing that they were working valiantly and effectively for the success of American arms.

CHAPTER XXVII

EARLY VOYAGES

ONE morning about the middle of May, 1917, the Chief of the Army Transport Service at New York and his principal assistants were brought to the alert by the arrival from Washington of an officer bearing the information that General John J. Pershing, who had assumed command of the A. E. F., was about to sail for Europe.

Prior to this time the Army Transport Service had been embarking on British liners a few base-hospital units, the first elements of the A. E. F. to reach European soil. In the departure of these units the port had witnessed some of the inevitable scenes of war. Base Hospital No. 4, organized at the Lakeside Hospital of Cleveland, Ohio, was first to sail; it departed on the S. S. *Orduna* of the Cunard Line on May 8. The members of the unit had arrived in New York on the morning of May 7. They brought with them only a small amount of technical equipment, and the enlisted men were still in civilian clothing. It took the embryonic port organization all day to bring from the warehouses the property needed, fit the troops with uniforms, make the passenger assignments, and put all records in order. A few months later the Port was able to embark a unit of the same size in a few minutes instead of several hours.

The little group of doctors, nurses, and enlisted orderlies and stretcher bearers made of their departure something of a rite. A few of the men carried musical instruments, and of these they improvised a band. As the *Orduna* backed away from her pier, the band struck up a patriotic tune, and the nurses who lined the rail took up the song. The Army had not yet prohibited visitors at the pier, which was crowded with relatives and

friends of those embarking. Most of the women were in tears, and some of those on the pier fainted and had to be revived.

Having sent Mercy in the van, we were now to follow with Force. The officer who brought the tidings to New York was Colonel D. E. McCarthy of the Quartermaster Corps. In strict confidence he imparted to Colonel J. M. Carson, then Chief of the Army Transport Service, the information that General Pershing and his personal staff would embark on the S. S. *Baltic*, of the White Star Line, late in May. Colonel Carson called in his chief assistants, and the group began to arrange details.

It was agreed that the embarkation of General Pershing and his party must be conducted in the greatest secrecy possible. The general's name was not to be mentioned in conversation or correspondence. In order to give the travelers identity they were to be called the "McCarthy party." The Port made the point that all members of the party must mark their baggage discreetly, omitting designations of rank and organizations, and that all official freight and baggage must be consigned to plain "D. E. McCarthy, Pier 60, North River." Only a few trusted employees at New York were admitted to the secret.

In vain these precautions. The officers selected for this enviable trip would "tell the world" that they were glad to go, and they proceeded to do so. Reckless of enemy agents who were doubtless watching for the movement, they labeled their trunks and traveling bags with the bold designation "A. E. F." Freight arrived at the pier emblazoned with General Pershing's name so prominently that you could read the letters across the street. In no time at all the news leaked out, and the transport officer at the White Star pier received certain reporters seeking to know the exact date when the "big fellow," as they called General Pershing, was to sail. The transport officer looked innocent and protested that it was all news to him.

The "McCarthy party" consisted of General Pershing himself, his personal staff, his military staff, field clerks, stenographers, interpreters, and others, including his head-

quarters troop, which was made up of soldiers of the 2d Cavalry, then stationed at Fort Myer, across the Potomac from the city of Washington. By this time the Army was in uniform, but the members of the "McCarthy party," to avoid notice, wore civilian dress and traveled to New York in small groups. After they reached the metropolis they proceeded to Governor's Island, where quarters had been prepared for them.

On Sunday morning, May 27, the party was complete. The *Baltic* was to sail at noon. Colonel Carson's chief passenger-transport officer went on board early, together with two principal executives of the White Star Line. The three men inspected the ship to make sure that no enemy agent had concealed any bombs aboard. Then they proceeded to make the stateroom assignments. Meanwhile the stevedores on the dock were busily loading the baggage. Noon came. The *Baltic* blew a long blast, threw off her mooring lines, and backed out into the stream. General Pershing was not on board, nor was any member of his party.

The *Baltic* went down the river, down to the lower bay; and there, well out of range of prying eyes on shore, a small side-wheel harbor steamer crossed her bows. The throbbing of screws ceased, and the great ship began to lose headway. The wind, half a gale from the southeast, was making the lower bay pretty rough. Only after considerable maneuvering was the small boat brought alongside the *Baltic* and made fast. A steel door opened in the *Baltic's* side, and a gangplank was let down across the rail of the small steamer. It made a precarious bridge—the harbor boat was rolling and pitching in the seas. General Pershing, watching his opportunity, was the first to cross. Then, singly and in small groups, the others darted over at favorable moments, until all were on the great ship—a hundred and eighty-seven. The lines were cast off, the propellers of the *Baltic* began to turn; and with hands waved and shouts of farewell exchanged, the headquarters of the A. E. F. was off for France.

There follows a list of the persons who made up the Pershing party on the *Baltic*:

THE ROAD TO FRANCE

Major General JOHN J. PERSHING

COLONELS

D. E. McCarthy,	Benjamin Alvord,
Harry Taylor,	A. W. Brewster,
Edgar Russel,	M. W. Ireland,
Lieutenant Colonel F. K. Puckle, British Army.	

LIEUTENANT COLONELS

D. S. Stanley,	C. C. Williams,
H. E. Wilkins,	W. A. Bethel.

MAJORS

J. L. Hines,	C. E. Stanton,
J. McA. Palmer,	J. H. Parker,
J. G. Harbord,	S. D. Rockenbach,
Fox Conner,	D. E. Nolan,
Logan Feland, U. S. M. C.,	H. A. Bayne,
R. S. Clark,	Hugh H. Young,
T. F. Dodd,	G. P. Peed,

Robert Bacon.

CAPTAINS

A. L. Conger,	H. A. Drum,
R. W. Briggs,	M. R. Hilgard,
J. B. Taylor,	N. E. Margetts,
W. O. Reed,	Ernest Graves,
Parker Hitt,	J. S. Chambers,
D. H. Scott,	J. L. Collins,
Gabe Filleul,	C. D. Liebman,
Gustav Porges,	L. C. Lehr,
M. L. Boyd,	R. G. Alexander,
Henry Beeuwkes,	F. S. Hill,

H. B. Moore.

FIRST LIEUTENANTS

G. S. Patton, Jr.,	R. B. Paddock,
E. B. Lewis,	H. L. Cecil,
R. M. Glaspey,	W. F. Rapp,
Olley Benar,	P. D. Miller.

SECOND LIEUTENANTS

E. F. Ely,	C. E. Beazeley.
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FIELD CLERKS

Thomas A. Clavering,	E. F. McCarron,
Frank A. Bouprete,	Walton H. Bush,
John J. Cassidy,	Noble Carter,
Oliver E. Scheid,	James L. Salisbury,
DeForrest Fesler,	Leslie D. Easton,
Clarence T. Williams,	George E. Adamson,
Harry F. Myers,	George G. Dennis,
Harold Skavlan,	John K. Smyth,
Fredrich H. Schwartz,	Albert N. Howard,
Grover W. Roth,	Charles C. Williams,
Bertin E. Cassou,	Everett C. Robinson,
Carl J. Rittenger,	Charles B. Shaw,
Bennett Lowell,	J. H. Patrick,
Walter Mandry,	H. S. Middlemiss,
S. W. Clark,	Daniel A. Burke,
J. H. Matter,	Harry Kurz,
Irvin Kurz,	R. Sellers,
William E. McQuillan,	James S. Wells,
Louis A. Jenny,	Thomas M. Wilson,
Harry Gray,	Charles A. Partridge,
T. M. Stack,	O. D. Miller,
R. W. Hinds,	C. A. Lauthold,
H. K. Hawkins,	W. W. Leathe,
E. J. Keller,	H. K. Harmon,
Charles Nynja,	Charles L. Gyger,
Edwin S. Benson,	Thomas C. Williams,
Carl Shively,	John K. Manock,

Howard P. Gaines.

INTERPRETERS

W. C. Eustis,	Winthrop Chanler,
Ernest DeWeerth,	J. T. Marshall.

SECOND CLASS

Sergeant R. A. Dickson,	Sergeant P. C. Meagher,
G. S. Martin,	Sergeant Quinby,
Sergeant H. D. Bedine,	Sergeant Pfeiffer.

THIRD CLASS

<i>Grade</i>	<i>Name</i>	<i>Organization</i>
1. Sergeant	Dixie B. Buynn	Troop B, 2d Cavalry
2. Sergeant	Philip P. Auer	Troop B, 2d Cavalry

THE ROAD TO FRANCE

<i>Grade</i>	<i>Name</i>	<i>Organization</i>
3. Corporal	Jacob P. Haffelfinger	Troop C, 2d Cavalry
4. Corporal	Leo J. Smith	Troop C, 2d Cavalry
5. Corporal	Fred Miller	Troop D, 2d Cavalry
6. Private	Ray Austin	Troop C, 2d Cavalry
7. Private	Harry Baker	Troop C, 2d Cavalry
8. Private	Louis A. Beaman	Troop B, 2d Cavalry
9. Private	Willie M. Fielder	Troop D, 2d Cavalry
10. Private	Albert E. McCravy	Troop C, 2d Cavalry
11. Private	Carl Moline	Troop B, 2d Cavalry
12. Private	Stephen Newman	Troop D, 2d Cavalry
13. Private	Steve Papp	Troop B, 2d Cavalry
14. Private	Christopher E. Schroder	Troop B, 2d Cavalry
15. Private	Charles Sedlacek	Troop D, 2d Cavalry
16. Private	Otto Zimmerman	Troop B, 2d Cavalry
17. Private	John J. Shaughnessy	Troop C, 2d Cavalry
18. Private	Ralph Chappell	Troop B, 2d Cavalry
19. Private	Abraham Cohen	Troop B, 2d Cavalry
20. Private	John W. Morgan	Troop B, 2d Cavalry
21. Private	John A. Nestroy	Troop B, 2d Cavalry
22. Private	James J. Murphy	Troop C, 2d Cavalry
23. Private	James Newberry	Troop C, 2d Cavalry
24. Private	Edgar R. Abele	Troop D, 2d Cavalry
25. Private	Edgar R. Rawlings	Troop C, 2d Cavalry
26. Private	Harry Cooper	Troop D, 2d Cavalry
27. Private	Clyde E. Mundy	Troop D, 2d Cavalry
28. Private	Edward E. Neff	Troop D, 2d Cavalry
29. Private	Raymond J. Pickett	Troop D, 2d Cavalry
30. Private	Edward Cohen	Troop D, 2d Cavalry
31. Private	Roscoe Williams	Troop A, 7th Cavalry
32. Sergeant	John H. Pearson	S. E. R. C. From New York
33. Corporal	Andrew J. Van Splinter	S. E. R. C. From New York
34. Sergeant	Edward Rickenbacker	Chauffeur. From New York
35. Private	Joseph J. Sequin	
36. Private	Oscar La Fortune	
37. Sergeant	Burt Graves	Company H, 20th Infantry
38. Corporal	Dwight L. Russell	(Unassigned) 5th Cavalry
39. Private	Ray P. Sanders	(Unassigned) 5th Cavalry
40. Private	Eugene Aungst	(Unassigned) 34th Infantry
41. Private	John Zevetski	Troop I, 8th Cavalry
42. Private	Fred N. Jones	(Unassigned) 34th Infantry
43. Private	Jesse C. Houston	Company B, 6th Engineers
44. Private	Clarence C. Goble	Company B, 6th Engineers
45. Corporal	Isaac C. Goddard	Company A, 7th Engineers

<i>Grade</i>	<i>Name</i>	<i>Organization</i>
46. Private	James D. Franklin	Company A, 7th Engineers
47. Sergeant	Thomas W. Smith	Company B, 1st Engineers
48. Corporal	Edward C. Flannery	Company E, 1st Engineers
49. Corporal	Charles R. Leitel	Company E, 1st Engineers
50. Sergeant	R. Roberts	Company E, 1st Engineers
51. Sergeant	Royster	
52. Corporal	Jurdon W. Aylor	Medical Department
53. Private	(Name not known)	Medical Department
54. Chauffeur	August Crosjean	Q. M. Corps
55. Chauffeur	George Kallman	Q. M. Corps
56. Chauffeur	Cesar Santini	Q. M. Corps
57. Chauffeur	Pierre Mamon	Q. M. Corps
58. Chauffeur	John J. Jennings	Q. M. Corps
59. Chauffeur	Ray T. Middleton	Q. M. Corps
60. Chauffeur	Christian Mezenen	Q. M. Corps
61. Chauffeur	George Linthicum	Q. M. Corps
62. Chauffeur	Leon Fornes	Q. M. Corps
63. Chauffeur	Elgin Braine	Q. M. Corps

Scanning the list, one observes several names which, before the war was over, became familiar to the public. Colonel McCarthy was first Quartermaster General of the A. E. F., and Colonel Taylor first Chief of Engineers. Colonel Russel, later a brigadier general, was Chief Signal Officer of the A. E. F. throughout the war. Colonel Benjamin Alvord was the A. E. F.'s Adjutant General for a long period, with the rank of major general. Colonel Brewster became Inspector General of the A. E. F. He wore the two stars of a major general. Colonel Ireland, also promoted, was Chief Surgeon of the A. E. F. throughout the fighting.

Lieutenant Colonel W. A. Bethel was Judge Advocate General of the A. E. F. Major J. L. Hines, assigned first to the Adjutant General's office at A. E. F. Headquarters, later, as a colonel, took command of the 16th Infantry. Then he became a brigadier general in command of one of the brigades of the First Division. Finally, as a major general, he commanded successively the Fourth Division and the Third Army Corps.

Major J. G. Harbord had a brilliant career and went to the rank of major general. He became head of the Services of

Supply and, next to General Pershing himself, perhaps the leading figure in the A. E. F.

Major Fox Conner later became a brigadier general and Chief of the Operations Division of the General Staff of the A. E. F. Major Robert Bacon, a former distinguished diplomat of the United States, served first as General Pershing's personal aide in France and later became the American liaison officer with the British Army at General Haig's headquarters. Returning to the United States with the rank of colonel, he died suddenly soon after his arrival.

Major S. D. Rockenbach eventually became Chief of the A. E. F. Tank Corps with the rank of brigadier general. Major D. E. Nolan also became a brigadier general before the war was over and served with distinction as the Assistant Chief of Staff of the A. E. F.

Well down in the list comes the name of Sergeant Edward Rickenbacker. The noted automobile racer sailed inconspicuously in the stowage, later drove General Pershing's automobile in France, then won a commission in the Air Service, and, as Major Rickenbacker, became America's premier flying ace.

The departure of General Pershing was but the prelude to the transatlantic voyage of the First Expeditionary Division, whose travel to New York and subsequent embarkation we have followed. It devolved upon the Navy to organize this first troop convoy and to escort it across the ocean. Rear Admiral Albert Gleaves, U. S. N., was selected to command the operation; and on his flagship, the cruiser *Seattle*, he personally conducted the advance squadron to France. When he returned to the United States in July, it was evident that naval convoying was to become an immense war activity. The Navy Department formally created the Cruiser and Transport Force and placed Admiral Gleaves in command of it. He established headquarters in Hoboken and thereafter directed the operation of all the American troop convoys throughout the war. The Cruiser and Transport Force extended its work until it was not only convoying our troopships, but actually operating most of them at sea; and Admiral Gleaves was in command of

a body of commissioned officers and enlisted men greater numerically than the entire uniformed personnel of the Navy before 1917.

The first transports selected by the Army were ill assorted for operation in the same convoy, because of their wide variety of speeds. A vessel's best guaranty against torpedoing was her speed; yet in a convoy all the vessels must hold down to the speed of the slowest. Admiral Gleaves made no attempt to operate the fourteen original transports in a single group. In preparing for the expedition he divided the convoy into four groups, placing vessels of like speed together. In June the Government decided to send across a large number of American destroyers, to be stationed permanently in French and British bases. Several of these were assigned to the first convoy as escort. In addition the Navy designated four cruisers, the *Seattle*, the *Charleston*, the *Birmingham*, and the *St. Louis*, each to escort one of the groups of transports. Among the yachts acquired by the Navy for war service were the *Aphrodite* and the *Corsair*, the latter formerly the property of Mr. J. Pierpont Morgan. These vessels, suited to anti-submarine work in the war zone, were ordered to cross with the first convoy. Besides all of this naval strength thrown about the first overseas expedition, a few coal-burning destroyers and 750-ton oil-burning destroyers were assigned to accompany the convoy as far out to sea as they could reach and still get back to St. Johns, Newfoundland, on their supplies of fuel.

Three navy transports were also assigned to the first convoy—the *De Kalb* (formerly the *Prinz Eitel Friedrich*), the *Hancock*, and the *Henderson*. The *De Kalb* was rated as an auxiliary cruiser, but, having been a passenger vessel, she had plenty of accommodations for troops. The navy transport *Hancock* had been in commission for some time; but the *Henderson* was new. Just out of the Philadelphia Navy Yard, she had been commissioned on May 24, 1917. Designed by the Navy to be a transport for marines, she had accommodations for 2,000 men besides her crew. She carried starboard and port batteries of four five-inch guns to the broadside. The *De Kalb*,

Hancock, and *Henderson* were to carry the marines attached to the expedition.

The ill-fated naval collier *Cyclops* was ordered to accompany the convoy. She was to carry coal to refuel some of the transports for the return voyage from France. This duty she performed, and after she returned to the United States she was sent to South America for a cargo of manganese. Homeward bound again, she touched at the island of Barbadoes, sailed from there on March 4, 1918, and was never heard of afterwards. She vanished as completely as if she had dropped off the earth. Not a floating spar, not a life belt, not a splinter of débris was ever found to indicate her fate. For a long time there were rumors that she had voluntarily surrendered to the enemy and had reached a German port; but after the armistice the Germans were able to tell us nothing about her—a final proof of the falsity of the whispered imputations against the loyalty of her commander. With her into oblivion went 293 officers and enlisted men of the Navy. The disappearance of the *Cyclops* remains one of the unsolved mysteries of the sea.

Altogether, thirty-six vessels made up the first convoy, which was the most strongly protected troop convoy sent across the Atlantic during the war. Thereafter destroyers no longer accompanied convoys across the ocean, but came out from French and English ports to meet them at the western edge of the war zone. The naval strength which accompanied a convoy from America to the edge of the war zone was known as the ocean escort. The ocean escort of even a large troop convoy consisted usually of a single cruiser. There was no submarine activity in mid-ocean; therefore the Navy merely provided an ocean escort strong enough to combat a chance surface raider.

In his first general order, dated June 7, 1917, Rear Admiral Gleaves divided the transports and escort vessels into groups as follows:

<i>Transport</i>	<i>Escort</i>	<i>Type of Escort Vessel</i>
GROUP NO. 1		
<i>Saratoga</i>	<i>Seattle</i>	Armored cruiser
<i>Havana</i>	<i>De Kalb</i>	Auxiliary cruiser
<i>Tenadores</i>	<i>Corsair</i>	Converted yacht
<i>Pastores</i>	<i>Wilkes</i>	Destroyer
	<i>Terry</i>	Destroyer
	<i>Roe</i>	Destroyer
GROUP NO. 2		
<i>Momus</i>	<i>Birmingham</i>	Scout cruiser
<i>Antilles</i>	<i>Henderson</i>	Cruiser transport
<i>Lenape</i>	<i>Aphrodite</i>	Converted yacht
	<i>Fanning</i>	Destroyer
	<i>Burrows</i>	Destroyer
	<i>Lamson</i>	Destroyer
GROUP NO. 3		
<i>Mallory</i>	<i>Charleston</i>	Cruiser
<i>Finland</i>	<i>Cyclops</i>	Collier
<i>San Jacinto</i>	<i>Allen</i>	Destroyer
	<i>McCall</i>	Destroyer
	<i>Preston</i>	Destroyer
GROUP NO. 4		
<i>Montanan</i>	<i>St. Louis</i>	Cruiser
<i>Dakotan</i>	<i>Hancock</i>	Naval transport
<i>El Occidente</i>	<i>Shaw</i>	Destroyer
<i>Edward Luckenbach</i>	<i>Ammen</i>	Destroyer
	<i>Flusser</i>	Destroyer

It was planned that the first three groups should leave New York on the 14th of June at six o'clock, eight o'clock, and ten o'clock a.m., respectively, and the fourth group early in the morning of June 16. This schedule was carried out almost as planned, except that the fourth group was delayed until the morning of June 17. All four army transports of the fourth group carried animals and freight for the expedition. The

naval transport *Hancock*, assigned to that group, had on board part of the regiment of marines.

Admiral Gleaves mapped out in advance the routes which the four groups were to follow across the ocean. For about half the distance across, all were to keep within the same lane; but at a designated position in mid-ocean the four routes were to diverge, so that, if any enemy submarines chanced to encounter one of the first groups, they could not lie in wait at the spot and attack the others as they came along. The route orders went only to the group commanders. Each vessel commander received a sealed envelope containing the instructions, but these envelopes were not to be opened unless the vessel in question became permanently separated from the convoy. The scene of principal submarine activity reported during early June was an area lying along the 20th meridian west of Greenwich and about 500 miles east of the Island of Fayal in the Azores. The convoy routes, therefore, were plotted to steer clear of this vicinity.

At the same time Admiral Gleaves prepared and issued to each ship in the convoy a set of instructions for the conduct of a transport at sea. These instructions, amplified and improved by later experience, became the standard code for the operation of our troop convoys, and were known as *Orders for Ships in Convoy*. The more important rules were in substance as follows:

- (a) The use of maximum convoy speed in dangerous waters.
- (b) An extensive, trained lookout watch, made effective by an efficient communication system to the officer of the deck and the fire control watch.
- (c) Continuous, alert gun watches in quick communication with the lookouts through the fire control officer.
- (d) Zigzagging under all conditions where the zigzagging might prove of value.
- (e) Denying information to the enemy by the minimum use of radio, by reducing smoke to a minimum, by complete darkening of ships at night, and by not throwing floating objects overboard.
- (f) A trained officer of the deck on the alert and ready to use the helm and engines to avoid a torpedo.

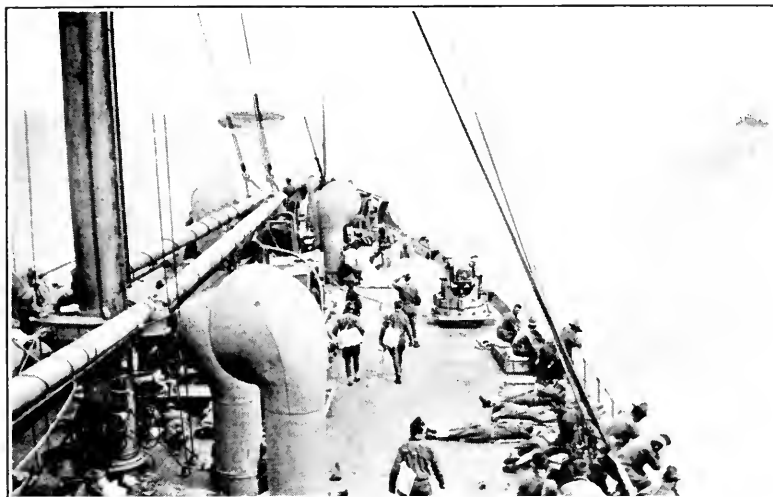


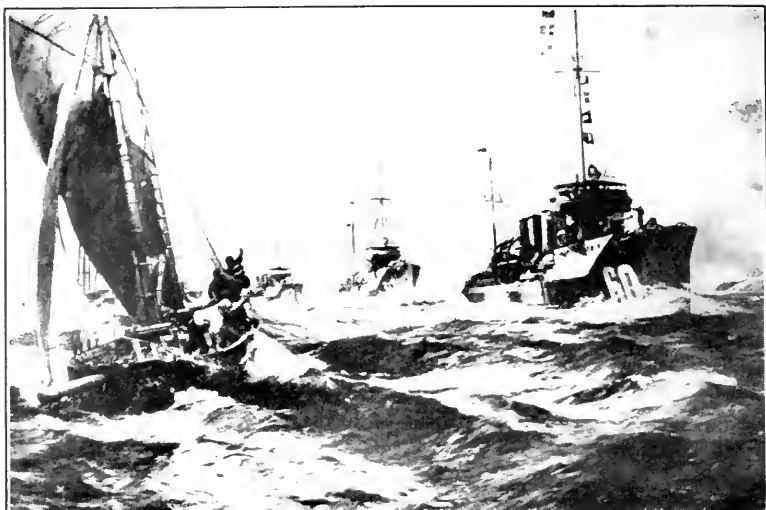
Photo by International Film Service

A TROOPSHIP IN CONVOY



U. S. Navy Official Photo

DESTROYERS ARRIVING AT RENDEZVOUS WITH CONVOY



From The Painting by Bernard F. Gribble

FIRST AMERICAN DESTROYERS ARRIVING AT
QUEENSTOWN



U. S. Navy Official Photo

DESTROYER GUN CREW WAITING FOR SHOT AT
SUBMARINE

- (g) Special prearranged signals by day and night, enabling quick information to be given to all by any ship sighting a submarine; and quick maneuvering by all vessels, in accordance with a prearranged plan, to avoid the submarine.
- (h) The use of depth bombs by all transports and their escorts.

It will be seen that nothing was left to chance, nothing to individual initiative taken in the moment of peril. Every contingency was studied out in advance. There was a plan of defense against any attack, and these rules of procedure were drilled into the operatives of the convoy and of the individual ships until they had become second nature. The *Orders for Ships in Convoy* are enough to explain why the Germans were never able to sink one of our troopships.

The convoy was divided into four groups for two reasons. In the first place, as we have explained, it was important to put ships of similar speeds together. Group No. 1 was a fifteen-knot convoy; every transport and escort vessel in the group could make fifteen knots an hour when pressed. Group No. 2 was a fourteen-knot convoy; Group No. 3 one of thirteen knots; and the fourth group, containing the cargo ships, could make but eleven knots as a maximum convoy speed.

The second reason for dividing the convoy was that our people were as yet entirely inexperienced in convoying. It was recognized that if a large number of vessels attempted to sail together and maintain close formation across the ocean, driving through fog and speeding at night without sailing lights, there would be danger of collisions. The division of the convoy into small groups of ships lessened this danger. Later on we were able to send a dozen or more vessels across the ocean in convoy formation. We experienced a few collisions, but never a torpedoing on the eastbound passage.

The morning of June 14 was densely foggy in lower New York Bay, a condition which made difficult the assembling of the vessels at the Ambrose Channel Lightship, just off the entrance to New York harbor. Since the break of dawn several pairs of sweepers had been working out to sea from the lightship to make certain that no enemy submarine had laid mines

in the path of the convoy. Coming down through the Narrows in the fog, the destroyer *Terry* fouled the torpedo net and was forced to go back to the Brooklyn Navy Yard for repairs. The *Terry* sailed three days later with Group No. 4, instead of with Group No. 1, as had been planned. With this slight accident to mar the departure, the first group got away at the scheduled hour, and the second and third groups followed at intervals of six hours. At sea there was no fog, and all the way to the coast of France the navigators could have asked for no more auspicious weather. Throughout the voyage the ocean was like a pond.

Steaming southeast from New York, the groups reached within a few hours a position, just south of the fortieth parallel of latitude, known in the routing of the convoy as Position 1. Here the ships turned slightly to port, and kept on due east just under the parallel until they reached a designated point about 1,500 miles out to sea, or a little more than half-way to the Azores and approximately on the route to them. The fortieth parallel almost exactly bisects Spain and Portugal and, in this country, passes near Philadelphia and Indianapolis. The point 1,500 miles at sea was known in the route as Position 2. Here the ships wheeled sharply to the northeast, setting out on a course which, if followed, would have carried them north of Scotland. They kept on this course for over 500 miles. This brought them to a point designated Position 2-A, where an interesting episode occurred.

One trouble about sending our oil-burning destroyers across the Atlantic was that not one of them could carry enough oil to take her such a distance. Some means had to be provided for fueling them at sea. Accordingly, twenty-four hours before the departure of the first group the navy oil ship *Maumee* put to sea and made for Position 2-A, a lonesome spot in mid-ocean, approximately halfway between New York and the English Channel, but somewhat south of the ordinary commercial steamer lanes.

Admiral Gleaves, experimenting in the autumn of 1916 with the Destroyer Force, which was then under his com-

mand, had devised a method of fueling oil-burning destroyers at sea while they were under way. The destroyer ran up on the lee side of the fuel ship while both were steaming ahead. Lines were then thrown across, and the two ships were secured to each other. The destroyer shut off her engines and allowed the fuel ship to tow her, and the latter pumped oil into the destroyer's tanks through a rubber hose. This piece of ingenuity became of practical value when the first two divisions of American destroyers were sent to the British destroyer base at Queenstown, Ireland, shortly after the declaration of war. The destroyers crossed from St. Johns, Newfoundland. The *Maumee*, stationed at sea, successfully fueled the ships of both divisions as they steamed ahead; one division was even oiled during a gale.

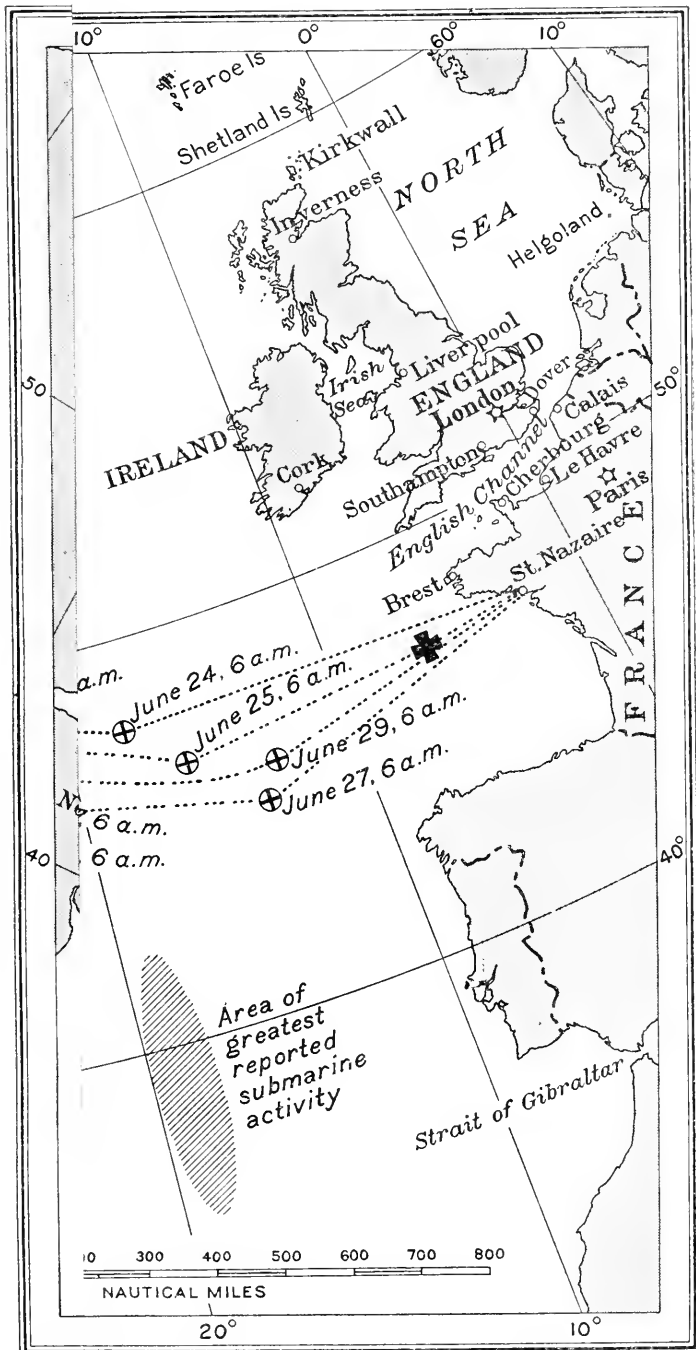
The same procedure was followed when the groups of the first convoy reached Position 2-A. The destroyers of each group ran on ahead of the transports and received their oil in time to allow the *Maumee* to get back to the station before the next group arrived. After the fourth group had passed, the *Maumee* proceeded to St. Johns, Newfoundland, there to refuel some of the smaller oil-burning destroyers which accompanied the convoy only to mid-ocean. The destroyers *McCall* and *Terry* received fuel at Position 2-A and continued with the convoy until it reached the war zone; then they turned back and proceeded to Newfoundland. The three coal-burning destroyers, *Lamson*, *Preston*, and *Flusser*, went with the convoy only to the limit of their steaming radii and then returned to the United States. The remaining destroyers—the *Wilkes*, *Burrows*, *Fanning*, *Allen*, *Shaw*, and *Ammen*—crossed the ocean with the convoy, helped to guard it through the war zone, and then went to join the American destroyer flotilla at Queenstown.

As the voyage progressed, there were other changes in the make-up of some of the groups. The yacht *Corsair*, originally attached to the first, or fifteen-knot, group, was hampered by an inexperienced crew of firemen and could not keep the pace. Ordered to fall back to the slower Group No. 2, she exchanged

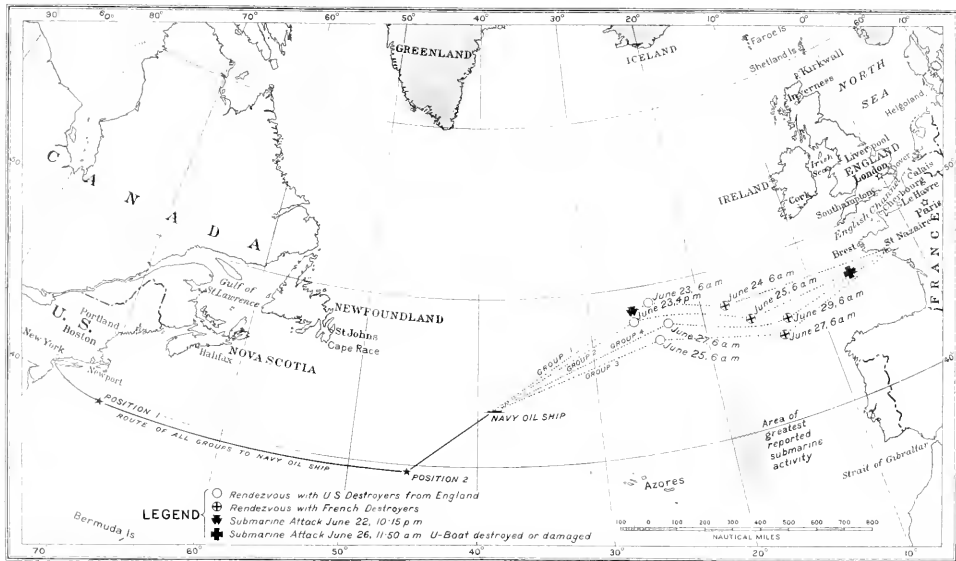
places with the *Fanning*, which raced up and caught the advance group. (Later in the war the *Fanning* acquired fame by capturing a U-boat and its crew.) On the second day out of New York the destroyer *Roe*, in the escort of the first group, developed trouble with her condensers and was ordered to make repairs and return to the United States.

Meanwhile life aboard the transports was anything but dull, although the days passed without historic eventfulness. Aboard the ships were thousands of boys who had never seen the ocean before. To them, all was novelty, charged with just that thrill of danger which added zest to the adventure. As soon as the troops went aboard the ships they received instructions in the abandon-ship drill. At sea the whistles of the transports were wont to blow at unexpected times, sending the sailors to the lifeboats and to the stacks of emergency life rafts, and the cork-jacketed soldiers to their stations, ready to leave the vessel instantly. Until the novelty wore off, one of these alarms was as exciting as the real thing. Then, just to keep the 15,000 passengers from becoming bored, the flagship of each group had a way of dropping back a towing-spar, rigged to resemble an enemy periscope. The gun crews on the transports waited for no signaled explanation of this phenomenon, but blazed away at the target, often in the belief that they were shooting at the enemy. Such events kept life full of incident and color.

Day after day the voyage continued. The group made no attempt at high speed in the relatively safe waters of the mid-Atlantic. A hundred submarines were sighted in the imaginations of the volunteer watchers who lined the rails from sunrise to darkness. At night the full mystery of the sea descended upon the voyagers. The ships were utterly darkened on the decks, and even below decks no lights were permitted, except an occasional dark blue bulb. To strike a match or smoke a cigarette on deck at night was a sure avenue to a court-martial. One night—it was in the war zone, and everyone was on the *qui vive*—the lookouts of the first group gasped as a beam of white light shot up into the sky from the *Seattle*, flagship of



Drawn



Drawn by Albert Host Bumstead

ROUTE OF THE FIRST AMERICAN TROOP CONVOY

the convoy. Some sailor on the cruiser had turned on a searchlight. The beam plainly marked the location of the convoy to any watcher within twenty miles. The light was extinguished within a few seconds, and it transpired that the sailor responsible had turned it on by accident; but he was tried and severely punished, as a warning that in convoy work carelessness could not be condoned.

After leaving the *Maumee* at Position 2-A, each group pursued its own independent route. In each case this route consisted of two stages. The first bore on a direct line to a point on the western edge of the submarine zone; a point predetermined as the rendezvous at which a number of American destroyers sent out from the British Isles should meet the group of transports. At this point the route again changed and proceeded to another rendezvous about twenty-four hours' steaming to the eastward, where certain French destroyers were to join the convoy escort. From this point the group route proceeded directly to St. Nazaire, a French port at the mouth of the Loire River.

The route prescribed for Group No. 1 continued to the northeast from the fuel ship for a distance of about 800 miles. This leg brought the group to the rendezvous with the Queens-town destroyers, a meeting set for the 23d of June at six o'clock in the morning. The rendezvous was fixed at a point farther at sea than it was supposed the submarines would go.

The Germans forestalled the escort plan by attacking the first group to the westward of the rendezvous on the night before it was to arrive at that point. The night was extremely dark. A fresh wind blew from the northwest and broke the sea into whitecaps, and the water was unusually phosphorescent. The group of ships was steaming ahead, following a standard zigzag course. At 10.25 p.m. the flagship *Seattle* suddenly fired several shots, blew six blasts on her siren, and turned sharply to the right. What had happened was that the officers on deck and on the bridge simultaneously had seen a white, glowing streak in the water about fifty yards ahead of the ship and crossing from starboard to port (right to left). An officer on

the deck shouted: "Torpedo has just crossed our bow!" The siren ripped the silence, the decks shrilled with boatswains' whistles, and the gun crews made ready to fire. Following the standard instructions, the transport group, which was running in two columns, immediately upon the signal from the flagship split apart to right and left, and one of the transports astern of the *Seattle* began firing at something, using a tracer shell that showed its course in flight. A destroyer raced through the darkness toward the firing.

At first the officers on the *Seattle* thought that what they had seen was the wake of a torpedo; but after all the testimony was in, it was decided, because of the breadth of the disturbance, that it must have been the wake of a submarine itself. One of the destroyers reported that it had run squarely over a submarine, which had been so deep down that there was no collision. The submarine had evidently released a salvo of torpedoes and then submerged at full speed; for almost immediately two of the vessels, the *Havana* and the auxiliary cruiser *De Kalb*, narrowly escaped being hit. One of the torpedoes crossed the course of the *Havana* just ahead of her bow, one other was seen by her, and two went close to the *De Kalb*. The vessels saw no more of the submarines, nor were any more torpedoes fired at them.

The attack showed us how well the enemy was aware of the progress of this first of our convoys, and how determined he was to prevent American troops from reaching France. When Admiral Gleaves was in Paris a few days later, the French Government communicated to him a late discovery that the Germans had ordered some of their submersibles, then operating from a base in the Azores, to attack the approaching American convoy. It was suspected that these submarines had picked up the first group and had trailed it all day on June 22, running on the surface, but well back out of sight. The favorable moment to strike could not come during daylight, because of the formidable protection given by the escorting destroyers; but on a black night like that of June 22 a trailing submarine might easily have overtaken the

group and fired her torpedoes, more or less blindly, to be sure, but with a fair chance of hitting something. The first group at its top speed traveled within the surface speed of the best U-boats.

The complete escape of the convoy may quite probably have been due to a fortunate accident which occurred on board the *Seattle* a few minutes before the attack. The helm of the cruiser suddenly jammed, and the ship took a rank sheer to starboard. With the cruiser thus out of hand in the darkness and no sailing lights showing, there was danger that the sheer might cause a collision; and the *Seattle* therefore blew her whistle to indicate that she was out of control. In a few minutes the ship was brought back on her course. It is quite possible that the submarine was at that very moment maneuvering for a favorable position which would make her aim unerring, and that the U-boat commander interpreted the warning whistle of the *Seattle* as a signal that his presence had been discovered. In that case he probably would have released several torpedoes at once and submerged to avoid retribution.

The second group of the convoy, consisting of the transports *Momus*, *Antilles*, and *Lenape*, encountered two submarines on June 26 about 100 miles off the French coast, while the ships were being escorted by their own and the Queenstown destroyers, by the two converted yachts, and by several French destroyers. It is probable that these encounters were accidental on the part of the submarines. The first attack occurred just before noon, and the second about two hours later. The first submarine did not fire at the group, and it succeeded in escaping the destroyers, which converged upon it as soon as it was sighted. The second submarine had a narrow escape. The destroyer *Cummings*, one of the six from Queenstown, sighted the bow wave of the submarine at a distance of about 1,500 yards and tore through the water after it. The submarine at once submerged, but the *Cummings*, following up the wake of bubbles, passed about twenty-five yards ahead of the U-boat and then let go a depth charge. There was a tremendous geyser of water upthrown by the ex-

plosion, and the *Cummings* later found on the surface several pieces of timber and other débris, including oil. It was evident that the submarine was either destroyed or seriously damaged. The commander of the *Cummings* was awarded a Distinguished Service Medal for this exploit.

The third group saw no submarines. On the morning of June 28 the fourth group, then near the coast of France, was thrown into excitement by the appearance of what seemed to be a submarine. Several shots were fired, and numerous officers and men of the group testified that they saw torpedo wakes in the water. The commander of the group, however, did not concur in the opinion that the object seen was a submarine.

When the groups arrived at the French coast, numerous French patrol boats and pilot boats came out to meet them, and they were also joined by airplanes and dirigible balloons. The voyage down the French coast took them past Penmarc'h Point, through the channel between Belle Isle and Quiberon Bay, and thence into the mouth of the Loire River, on the north bank of which, about five miles in from the sea, lay the ancient Breton town of St. Nazaire. As the great troopships, the first from America to reach France, drew up to their berths, the sea wall of St. Nazaire was crowded with the population of the town, a silent, marveling multitude.

The first group arrived at St. Nazaire on June 26, the second on June 27, the third on June 28, and the fourth on July 2. They delivered their troops in time for them all to take part in the memorable parade in Paris on the Fourth of July.

The St. Nazaire sea wall became a scene of great activity as the ships began pouring forth great quantities of provisions, ammunition, baled hay, automobile trucks, horses, locomotives, and other military freight. The convoy quite overtaxed the facilities of the French port, which, even with the addition of German prisoners of war, was unable to supply the labor to unload the transports in quick time. The marines who had crossed in the navy transports, as well as many of the sailors, were set to work at stevedoring.

As soon as the vessels were unloaded and refueled for the

return voyage, they were again formed into four groups. A strong escort was provided for each group through the war zone, but thereafter each proceeded to New York under the protection of a single cruiser. The first group left France on July 2, and the last one, that of the cargo vessels, on July 14; and all of the ships were safely back in the United States on July 24. Admiral Gleaves, on the *Seattle*, escorted the final group home. The Admiral's report that the vanguard of the A. E. F. had been landed in France and that all the transports had returned to the United States without the loss of a man or a ship, was the occasion of public rejoicing in America. The nation received it as an omen of success in the future transportation of our forces to France.

CHAPTER XXVIII

THE AMERICAN TROOP CONVOYS

THAT first voyage inaugurated a transatlantic ferry service which was to continue and wax great until the resources of America had brought the war to a successful conclusion. In the face of such a prospect, the question arose at once, in Washington, What of the future of the service—how should the ships be managed; who should be in control? The Navy, skilled in the carte and tierce of warfare at sea, was obviously the agency to manage the troop convoys themselves, to issue the orders, prescribe the routes, and provide the protection for them. That was traditional. Since the days when the galleons freighted to Europe the spoil of the New World, the navies of the earth had convoyed their countries' merchantmen.

But there was another tradition to be considered, and that an ancient one. Our Army had always operated and navigated its own transports. In the past it had looked to the Navy for protection at sea, but it had kept in its own hands the operation of its ships. That was true on the expedition to Cuba and later in the transport of troops to the Philippines. The ships of the first convoy which proceeded to France were handled by civilian navigators responsible to the Army. Governmental agencies are jealous of their prerogatives and duties, and here was an activity of the War Department—the management of troopships—deeply rooted in custom. It was to be expected that the Army would continue to sail its own vessels under the protection of the Navy, and that the Navy's part in the enterprise would end with that.

Traditions fall before new conditions. The submarine blockade was a new condition. To pass that blockade success-

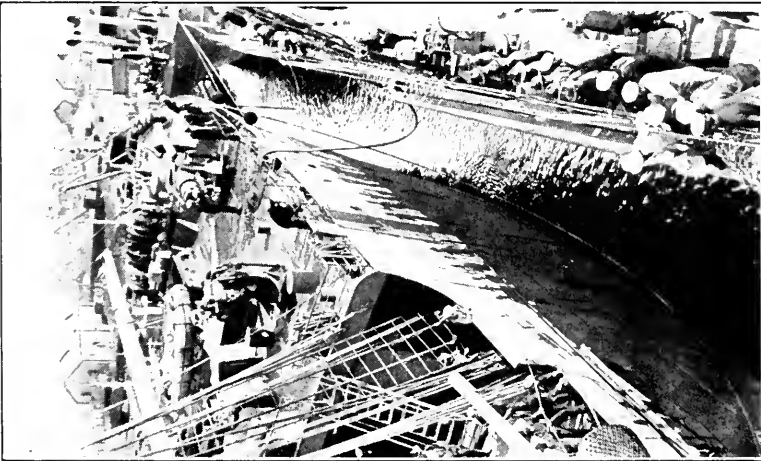


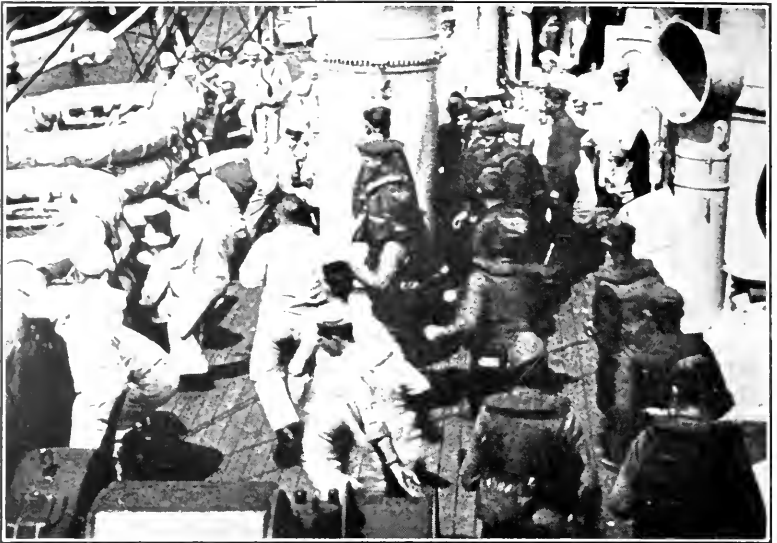
Photo by Signal Corps

**AMERICAN TRANSPORT DOCKING
AT ST. NAZAIRE**



Photo by Signal Corps

WARNING SIGN ON TROOPSHIP



From An Official Motion Picture

ABANDON-SHIP DRILL ON TROOPSHIP

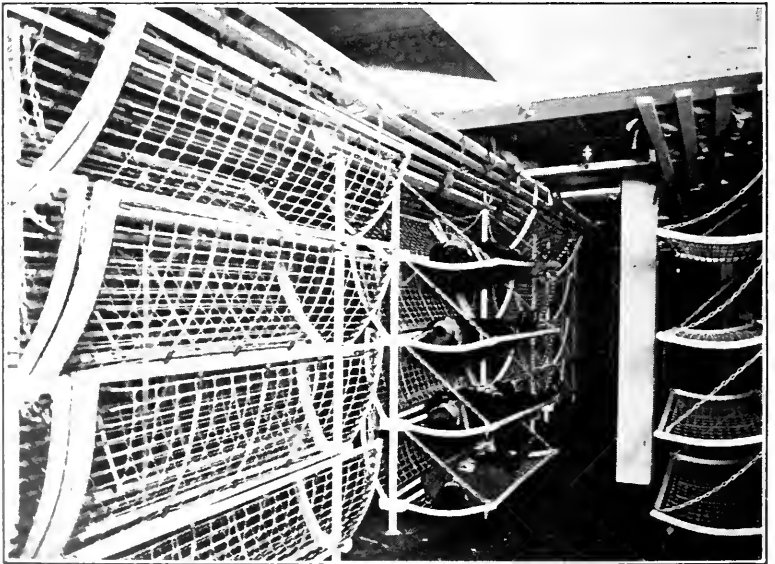


Photo by Signal Corps

STANDEE BERTHS

fully, the merchant ships must not only herd together in close formation as in convoys of the old sort, but, holding that formation, they must also maneuver day and night, through sunshine, tempest, fog, and snow, without lights showing, without the use of the wireless, but entirely by synchronous obedience to a prearranged system of intricate and involved sailing plans. Such evolutions demanded on the bridge of every transport a degree of navigating ability which the Army certainly, and the merchant marine probably, was not prepared to furnish. The Navy alone possessed the requisite seamanship for it, for the naval squadrons and flotillas voyaging at sea invariably proceeded in formations maneuvered by a single command.

This, however, was only one consideration. Safety from the hidden enemy was not only a matter of armed protection and defensive evolutions, but it also hinged upon the hour-to-hour conduct of each ship in the convoy. A single careless or indifferent ship endangered all. It was necessary that the rules of the convoy govern the action of every man on every vessel. Obedience to the letter of the whole extensive body of rules was a prime essential. Such obedience could be gained only through toothed discipline—a discipline extending impartially from the bridge down to the humblest member of the “black gang” in the firing room; emanating from the convoy commodore and through him from the naval commander of the entire system. Such discipline could not be applied to civilian crews. It would be difficult to attain it in army crews working in liaison with the Navy.

The Army therefore ceded certain powers; and the two departments came, in the summer of 1917, to an agreement that the Navy was not only to organize, conduct, and command the troop convoys, but was also to furnish, from its own uniformed personnel, the officers and crews for the troopships. The Army’s control over a transport was to cease when she left the pier. The Army was to provide the passengers and cargo and load the ships and be in charge of other harbor work. The Navy, in addition to providing the crews, was to operate the troopships, repair them when they broke down, bunker

them with coal and oil, and supply all provisions eaten at sea. It was the first time in history that the Army allowed another agency to feed its men.

It was evident that the former German passenger ships were to become the backbone of the forthcoming transport fleet. While one bureau of the Navy was repairing the damage done to these vessels by their German operators, Admiral Gleaves's new Cruiser and Transport Force was assembling navigating crews and placing them on board as rapidly as the ships became habitable. Most of the liners were in filthy condition. The navy men cleared away the litter, scrubbed and sluiced down the vessels until they were as spotless as battleships, and then turned in to help the refitting gangs install standee bunks, increase the sanitary and cooking facilities, and do the other things that turned passenger ships into troop transports.

As each former German vessel was ready for operation, its new crew took it out to sea for a forty-eight-hour trial run, despite the numerous anonymous letters which came to those on board declaring that the vessels would never leave port. The agents of the enemy were in fact able to accomplish some harm, but not enough to make good their dreadful threats. The *Pocahontas*, on her trial, had to shut down while the engine-room force removed several large pieces of iron and steel from one of her great throttle valves. Six mysterious fires occurred on the *Pocahontas* while she was being fitted out. On another transport a rope boatfall parted while the lifeboat was being hoisted to the davits—a new rope, too. An investigation showed that hydrochloric acid had been syringed into it, rotting out its heart. A knocking in one of the engines of the *Huron* betrayed the presence of a hammer head which had been placed in the cylinder under the piston. There were other minor annoyances on the ex-German ships—ground glass in oil cups, holes punched in the air-tight metal buoyancy cylinders of life rafts, gunpowder in the coal bunkers, and damage to bolts and other pieces in the boilers and machinery—but all were discovered before any serious damage was done.

Until May, 1918, the Cruiser and Transport Force let the

coaling of our troop transports to private contractors. As long as this arrangement continued, the bunkering situation was a source of trouble. The labor employed by the contractors was unreliable, and the navy officers could never tell exactly when they should be able to send a ship to sea. The trouble came to a head one day when both Army and Navy were making a special effort to dispatch the transport *Mt. Vernon* in record time. The Germans had begun their drive in France, and the joint transportation organization was experimenting with the *Mt. Vernon* to see how quickly one of our troopships could be received and sent forth again loaded. The goal was a maximum of three days in port.

All other activities leading to the quick clearance of the *Mt. Vernon* progressed satisfactorily. In thirty-six hours the food stores for the trip were on board, all necessary port repairs to the vessel were made, and it was evident that the troops would be ready on time. Only the fueling lagged behind. The indications were that the transport would not have her bunkers half filled at the scheduled hour. For the Cruiser and Transport Force, this was the last straw. Admiral Gleaves recruited a working party from the navy crews of other vessels in port, commandeered the coaling equipment of the contractors, and finished bunkering the *Mt. Vernon* before the end of the three days. Thereafter, the Force itself continued to operate the coaling equipment at New York. Fueling delayed no more ships—nor, incidentally, were any more bombs found in the transport coal.

The bunker capacity of troop transports was a problem which called for official attention. Not one of the ships could carry in her regular bunkers enough coal to take her to Europe and bring her back again; yet we could secure no coal in France or England for refueling. The only recourse, then, was to provide all transports with additional bunker space. The refitters sheathed the adjacent cargo holds and connected them with the firing rooms. It was impossible, however, to give the *Leviathan* sufficient bunker space for the round voyage. In going to France and back she burned about 1,000 tons of coal

more than she could carry at once. Accordingly, by special arrangement with the British Government, the *Leviathan* was permitted to load 1,200 tons of Welsh coal each time she reached her debarkation port.

The *Leviathan* originally began to run between New York and Liverpool. After the second voyage, which began on March 4, 1918, Admiral Gleaves recommended that the *Leviathan* operate between New York and Brest. Only a few harbors in the world could accommodate "the big girl"; in England, only Liverpool and Southampton. We thought at first that we must send the *Leviathan* to England because she had to load additional fuel for the return voyage. Admiral Gleaves recommended that coal be brought to Brest especially for her. This new plan would permit the *Leviathan* to sail from New York as soon as she could be loaded; whereas, because of her deep draft, she could get into Liverpool only at the high tides of the new moon or the full moon, so that she had been restricted to one full voyage every two lunar months. The harbor at Brest was so deep that she would not have to pay any attention to tides. Admiral Gleaves's recommendation was adopted by the Navy, and on April 24 the *Leviathan* sailed on her first voyage to Brest. Eighteen days later she was back again in New York; and thereafter her turn-arounds averaged twenty-six days—an increase of 30,000 men in her annual carrying capacity.

The Navy operated the transports as it does its warships. In other words, the Cruiser and Transport Force made each troopship a self-contained unit, carrying not only a crew to navigate the vessel, but also a working party of size and ability to repair at sea anything short of a complete breakdown. Every battleship is operated in this fashion. The result was that the transports carried crews much larger than those of commercial service. A crew of 1,200 men can attend to every navigational need of the *Leviathan*. The Navy crew on that vessel numbered close to 2,400 men; and on all the other troopships the Navy maintained crews about twice the size of the ordinary civilian crews. Although this naval practice

subtracted somewhat from the troop-carrying capacity of the ships, it made up by keeping the transports in practically continuous operation, with seldom a lay-up in port for overhauling.

As the fleets of both cargo and troop transports grew, it became necessary to build up under Admiral Gleaves's command a great force of armored cruisers for the escort of the convoys across the ocean. Before the eastward movement ceased, practically all the cruisers in the American Navy which had sufficient steaming radius were engaged in escorting convoys. Eventually there were twenty-eight of them in the Cruiser and Transport Force, divided into squadrons and divisions as follows:

NEW YORK SQUADRON (I)

Division 1	Division 2	Division 3
<i>Seattle</i> (Flag)	<i>South Dakota</i>	<i>Columbia</i>
<i>North Carolina</i>	<i>Pueblo</i>	<i>Minneapolis</i>
<i>Montana</i>	<i>Frederick</i>	<i>De Kalb</i>
<i>Huntington</i>	<i>San Diego</i>	<i>Von Steuben</i>
Special Duty: <i>Niagara, Dubuque</i>		

NEWPORT NEWS SQUADRON (II)

Division 4	Division 5	Division 6
<i>Sialia</i> (Flag)	<i>Isis</i> (Flag)	<i>Albany</i>
<i>Charleston</i>	<i>Denver</i>	<i>New Orleans</i>
<i>St. Louis</i>	<i>Galveston</i>	<i>Tacoma</i>
<i>Rochester</i>	<i>Cleveland</i>	<i>Chattanooga</i>
<i>Olympia</i>	<i>Des Moines</i>	

In addition to these, the French Government furnished three men-of-war to operate with our Cruiser and Transport Force—the *Gloire*, the *Marseillaise*, and *du Petit Thouars*. These three were under the command of Rear Admiral Grout, who raised his flag on the *Gloire*. One of the French cruisers, *du Petit Thouars*, was the only warship connected with our transporting which came to grief in the war. She was torpe-

doed and sunk in the Bay of Biscay while escorting one of our army cargo convoys.

The duties of the service kept all the cruisers at work, winter and summer, through fair weather and foul. American warships never before experienced such continuous operation over such a long period of time. The winter of 1917-1918 descended upon the North Atlantic with a severity which sailors will never forget; but the cruisers kept at it without a break, often heavily sheathed in ice, but maintaining a watch and a vigilance that did not falter. Death was not an uncommon visitor to the cruisers. Cold, wet, exposure, and the strain of responsibility all claimed their toll; but they could not stop the ships. Not one of the cruisers had normally a steaming radius that would take her almost across the ocean and then back again to a home port, and in heavy weather the normal radius was materially reduced; so that every one of them which started out with a convoy had to load great piles of coal on her decks—sometimes as much as 600 tons. This extra fuel further cramped the quarters aboard ship and added to the discomfort of life.

Not even the war service of the cruisers excused them from the universal obligation of American warships to engage in a stipulated amount of target practice. This the cruisers that escorted the troop convoys managed to sandwich in after delivering their transports at New York and while on the way down to Newport News for coal. The Force consistently followed the practice of coaling ship at Newport News in order to save hauling coal to New York by rail; although certain of the cruisers, those which helped in the escort of the British passenger ships, refueled at Halifax. All the cruisers, crowded as they were, managed to find room for recruits in training for service on the troopships.

It was the duty of a cruiser to escort a group of ships to the western edge of the war zone, pass them over to the American destroyers from Southampton or Brest, and then turn back to the United States alone or in the escort of troopships which had discharged their human loads in France. So far as the

escort duty was concerned, the responsibility of the Cruiser and Transport Force ended at the border of the European war zone. Late in the war the Germans were able to establish a war zone off the American coast. The Cruiser and Transport Force thereupon accepted the responsibility for the safe conduct of convoys through the domestic submarine area, and commanded a force of destroyers and patrol boats which stayed with the convoys until they were well out to sea.

The cruiser itself was merely a deep-water escort—protection against the surface raider and little else. What would have happened if the Germans had succeeded in sending a battle cruiser to sea may be conjectured. Such an enemy would probably have stayed back out of range and blown the lighter-gunned ship out of the water. The ocean escort of each convoy group was usually a single cruiser.

In the summer of 1918 we had reliable information that the enemy had commissioned his new cruiser submarines, boats which could remain at sea for several months and could operate anywhere between their bases and the coast of the United States. The employment of such vessels would have turned the entire Atlantic into a war zone, and it is possible that it would have forced us to escort with destroyers from New York to Brest. But these submarines, although we expected them to begin their work about September 1, 1918, never came out.

All the cruisers were originally under the direct command of Admiral Gleaves at New York, with a few of the warships stationed at Newport News to escort the occasional cargo convoys which assembled in Chesapeake Bay. The British managed our cargo convoys at sea and supplied much of the protection. As the cargo convoys increased in size and number, more and more American cruisers had to be assigned to their escort; and in early 1918 Admiral Gleaves split the cruiser fleet into two squadrons and delegated to Rear Admiral Marbury Johnston the command of the Second Squadron, with headquarters at Newport News. At first this second squadron escorted cargo convoys exclusively. Admiral Gleaves stayed

at New York and retained personal command of the First Squadron, which was largely engaged in escorting troop convoys.

After the German drive opened, the Port of Embarkation at Newport News began to send large numbers of troops to France. Certain troop transports were assigned to Newport News, and the cruisers of Division 4 of Admiral Johnston's squadron were detached from the cargo convoys and designated as the escort of the Newport News troop convoys. These ships, four in number, were under the general command of Rear Admiral H. P. Jones, whose flagship was the *Sialia*. The cruiser *Olympia*, of Admiral Jones's division, was not an escort vessel: it performed special duties imposed by the Navy Department. Admiral Johnston's flagship was the *Isis* of Division 5.

Of the New York squadron of cruisers, the *Seattle* (Admiral Gleaves's flagship), the *North Carolina*, *Huntington*, *South Dakota*, *Pueblo*, and *Frederick* escorted the United States troop convoys. The British Navy usually escorted the convoys of the British liners which, as we know, took 1,000,000 Americans to France; but the United States cruisers *Montana*, *Santiago*, and *St. Louis* assisted in this work. The *Minneapolis* and the *Columbia*, of Admiral Gleaves's Division 3, escorted cargo groups. The *De Kalb* and *Von Steuben* of Division 3 were rated as cruisers, but they usually acted as troopships solely, though, on occasions when armored cruisers were not available, either of them could serve as ocean escort for a group of troopships.

The first troop convoy, we have seen, sailed in four groups. Their voyage inaugurated a system which continued to the end of the war. Thereafter all convoys leaving the United States were known as groups, and were numbered consecutively, beginning with No. 5. The fifth group (also known as the second expedition) sailed on July 31, 1917; it consisted of the transports *Pastores*, *Tenadores*, *Mallory*, *Saratoga*, the oil tanker *Arethusa*, and the cruiser *North Carolina* for ocean escort. Until the former German liners came in commission

as troopships, the group sailings were infrequent. The original ten troopships of the first convoy, augmented by the three Navy transports *De Kalb*, *Henderson*, and *Hancock*, comprised the entire transport fleet until September, 1917, when the ex-German liners began to come into service.

The *Huron* and *Pocahontas* first sailed in September. In October, the *President Lincoln*, the *Covington*, the *Agamemnon*, the *Mt. Vernon*, the *Von Steuben*, and the *America* made their first trips with troops. In November, the *Powhatan*, *Madawaska*, and *Æolus* went into commission. In December the *George Washington*, *Antigone*, *Susquehanna*, and *President Grant* joined the fleet. The *Leviathan*, leaving New York on December 15, also made her first trip with troops that month, but only incidentally to her own trip to England to be dry-docked. The *Mercury* took out her first load on January 4, 1918. The last of the ex-German ships commissioned, the *Princess Matoika*, which had been interned in the Philippine Islands, made her first voyage as a trooper in May, 1918.

The troop sailings from the United States during 1917 were trifling, by comparison with what we were to know later. In round numbers the overseas movement of 1917 was as follows:

<i>Month</i>	<i>Troops transported</i>
June	11,750
July	3,500
August	5,000
September	10,750
October	22,500
November	9,500
December	35,500

In all, eighty-six groups of American troopships sailed to France before the armistice. Of these, eighty-one were numbered groups and five were special groups. (The complete list of group sailings of our troopships appears at the end of this

volume as Appendix G.) The last group, consisting of the *Orizaba* and *Siboney* sailing unescorted, left New York on November 4, 1918. A convoy was called a group, whether it consisted of one ship or a dozen. The *Leviathan* usually traveled alone or else in company with the *Great Northern* or the *Northern Pacific*, the only other transports which could maintain her speed. These vessels often went unescorted across the ocean, because they were able to outfoot any raider that might pursue them; and sometimes in heavy weather the *Leviathan* went through the war zone itself without protection other than her great speed. An American destroyer that once attempted to keep pace with her as she drove at full speed into the teeth of a Biscay gale, limped back to port in a few hours with her hull stove in by the seas.

The Cruiser and Transport Force, as it perfected the science of protecting the troopships, kept up an incessant campaign to improve the efficiency of their operation. The officers of the Force studied each transport individually to determine the best method of handling her in port to avoid all waste motion in her dispatch. The convoy groups were carefully arranged to allow each vessel to use her maximum practicable speed at sea. A spirit of competition arose among the crews of the transports; the average turn-arounds grew shorter and shorter, until by the spring of 1918 the pinnacle of efficiency had been attained; and when the German drive started, the Cruiser and Transport Force, sparing neither ships nor crews, was able to drive all of them at top speed in order that America's men might not be too late. Major repairs which meant shipyards and dry-docks were neglected; it was anything to keep the ships going. The crew repair parties worked overtime, day and night, at sea and in port, in order to keep the transports everlastingly at their task of ferrying back and forth across the Atlantic. It was necessary abuse, but not one vessel broke down under the punishment.

Still those in command were not satisfied. They believed that the fleet could do even more than it was doing. Admiral Gleaves proposed a plan which, he maintained, would give us

almost overnight the equivalent of a half dozen or more new transports without adding a ship to the fleet. We had been cramming troops on ships to what seemed to be their utmost capacity. Admiral Gleaves coolly proposed that, by the installation of certain fittings, the passenger capacity of the entire transport fleet be raised twenty per cent.

As it was, all the normal passenger decks and accommodations, and all the holds that could be spared and would do for the purpose, were crowded with berths. Yet there was still considerable unoccupied space aboard each transport—passages and companionways, mess halls, even the sides of the cabins on the open decks. The mess halls, for instance, offered possibilities. They were large, bare rooms, used only during the three meal hours of each day, the men standing as they ate the food served from kettles brought from the galleys. Upon the walls of each mess hall could be screwed and bolted pipe-berths which could fold up against the walls and be out of the way when not in use. The frame of a berth of this sort was made of metal pipe to support a bed-spring. Along the ceilings of the mess halls could be slung hammocks to be used at night. Pipe-berths could be attached also to the bulkheads of all wide passageways, and even, out on deck, to the bulkheads of the cabin structure—such beds, of course, to be used only in good weather.

The standard berths installed in all troop quarters aboard our transports were known as standees. The standee berths were joined in pairs, and a single section of them consisted of two stanchions supporting three pairs of berths between them—six beds in all. Admiral Gleaves urged that wherever there was room for it overhead—and there was plenty of headroom in nearly all the troop quarters—the standee berths be four and five pairs high instead of the usual three, so as to make sleeping room for eight or ten men instead of six. Up to this time, certain non-commissioned officers had occupied staterooms on the transports. The admiral proposed that the partitions and built-in berths be ripped out of these spaces and standee berths substituted. He proposed that cots be installed

in officers' staterooms wherever there was room for them. These extra fittings would give the entire fleet an additional capacity of about 15,000 men a month. The installations could be made quickly.

The chief of the Cruiser and Transport Force urged by every argument the adoption of these measures. Then he promulgated, as a secondary and supplementary proposal, the subsequently famous overload plan. This was nothing less than that the Embarkation Service should arbitrarily increase the load of men on each ship to fifty per cent above the total berth accommodations. The men so loaded would have to sleep in shifts, one watch occupying the sleeping quarters for twelve hours and then surrendering them to the other. The plan would make sleeping and messing at sea practically continuous day and night; but it would permit the fleet to carry an additional 35,000 troops a month, thereby giving us the equivalent of twenty new transports of average size without the expenditure of a dollar in money or a day in time for new floating equipment.

Admiral Gleaves made these proposals on May 2, 1918, and the War and Navy Departments approved both plans at once, the first unconditionally and the second provisionally. The admiral was ordered to install additional sleeping accommodations to the physical limits of all the transports; but he was first to try out the fifty-per-cent overload plan experimentally on two fast transports. The *Agamemnon* and the *Mt. Vernon* were selected, simply because they happened to be then in port.

Both plans worked admirably. The installation of additional cots, standees, and pipe-berths increased the carrying capacity of the entire fleet, not merely the twenty per cent of Admiral Gleaves's forecast, but a full twenty-five per cent. The double-shift system was entirely successful on the *Agamemnon* and the *Mt. Vernon*; and the War and Navy Departments forthwith authorized excess loading for seven other fast transports—the *Great Northern*, *Northern Pacific*, *Von Steuben*, *America*, *George Washington*, *Orizaba*, and *Siboney*. The influenza epidemic at sea put a stop to overloading. But

by the end of August, 1918, the intensive loading of transports had landed in France 100,000 extra troops—the equivalent of nearly three army divisions plus the necessary support troops.

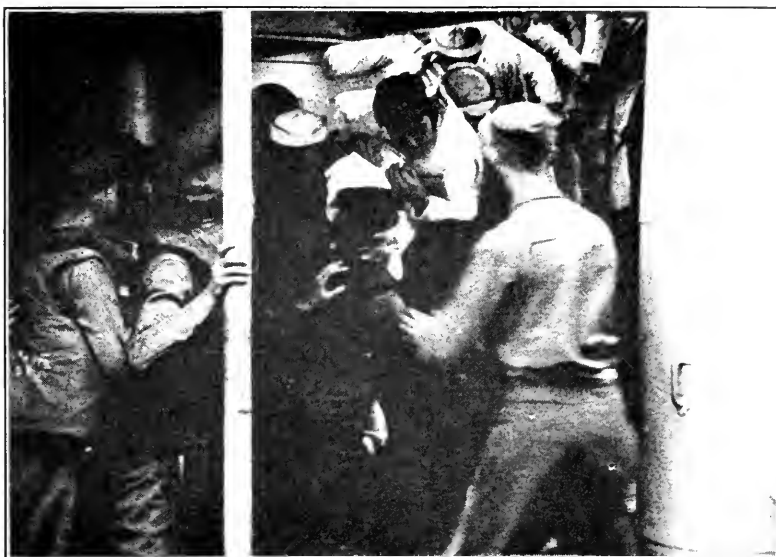
The Cruiser and Transport Force never ceased to try to improve the protection given to the voyaging soldiers. The original *Orders for Ships in Convoy*, revised and amended, with useless precautions dropped and orders dictated by subsequent experience added, laid down primarily for the voyage of the first expedition, became a canonical code followed by every man of the Force implicitly and to the letter. The *Orders* omitted no detail that could add to the safety of the transports. Assuming, however, for the sake of caution, that the convoy rules would fail to protect the transports, the Navy paid great attention to the subject of life-saving at sea after a crowded troopship had been torpedoed. No ship left port without carrying a kapok life jacket for every man aboard plus a ten-per-cent excess. A well-conducted merchant vessel regards the rules of safety as met if it gives floatage to all persons on board, whether the floatage be on rafts or in lifeboats. Loaded as the American transports were, they went far beyond this standard in providing life-saving equipment. Each transport carried dry floatage for all, plus an excess number of rafts, so that everybody on the ship could be sustained above water even if half the lifeboats were disabled. This margin of safety discounted in advance the usual heavy listing of a ship immediately after a torpedoing, which throws her to an angle such as may render impossible the launching of all the lifeboats on the higher side. If a loaded American troopship had been sunk, the loss of life would probably have been surprisingly small.

To avoid all waste of time and motion, the abandon-ship drill was carefully worked out for each vessel individually. The instruction in abandoning ship often began in the embarkation camps before the soldiers had ever seen a transport, with a motion-picture machine as the silent but vivid teacher. The pictures showed, first, the panic to be expected on a ship

when every man's movements in an emergency are not well ordered, and then the orderly method of abandoning the vessel. The actual abandon-ship drilling was begun while the transport was still in the harbor; and thereafter a drill was ordered, at unexpected times, at least once every day during the entire passage. When the transport reached the danger zone, no one was allowed to be asleep at either dawn or twilight. The abandon-ship drill became second nature to the transport crews, who instructed each new load of soldiers in the maneuver. As the voyaging soldiers—many of them landsmen who had approached with trepidation the ordeal of the ocean crossing—observed the protective measures and grew proficient in the drills, they became filled with a comfortable sense of security.

The *Orders for Ships* ensured the longest possible period of flotation for a transport if she were torpedoed. The instructions were strict that all water-tight bulkhead doors must be kept closed throughout the voyage and all inter-communication pipe-lines and sanitary ducts leading through the bulkheads shut off so far as was practicable. Under these comprehensive instructions, every transport carried in each water-tight compartment a number of stout braces to be used in shoring up a damaged or yielding bulkhead after the ship was hit. The rules demonstrated their excellence on more than one occasion; for two of our transports, the *Finland* and the *Mt. Vernon*, after being torpedoed at sea, were saved by the integrity of their water-tight bulkheads; and of the three transports which were sunk, two remained afloat so long that nearly all on board had time to get away safely.

Nearly a million men crossed to France in ships operated by the Navy, and the average voyage took approximately fourteen days. It follows that the task of feeding the army voyagers before the armistice was equivalent to feeding for two weeks the entire population of such a city as Detroit. Moreover, all the 2,000,000 men of the A. E. F. returned to the United States on American transports; so that, in all, the Navy fed 3,000,000 ocean passengers for an average of two weeks each.



From An Official Motion Picture

1. THE WRONG WAY. SOLDIERS AND SAILORS. AT ABANDON-SHIP ALARM, ATTEMPT TO USE COMPANIONWAY SIMULTANEOUSLY IN PANIC



From An Official Motion Picture

2. THE RIGHT WAY. SAILORS TO THEIR STATIONS FIRST; SOLDIERS AFTERWARDS; NO BLOCKING OF EXIT

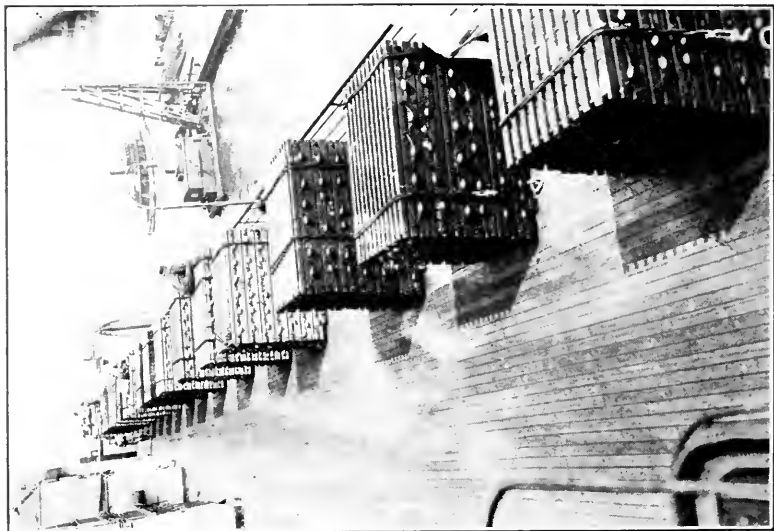


Photo by Signal Corps

**EMERGENCY LIFE RAFTS ON
LEIFLIEH**

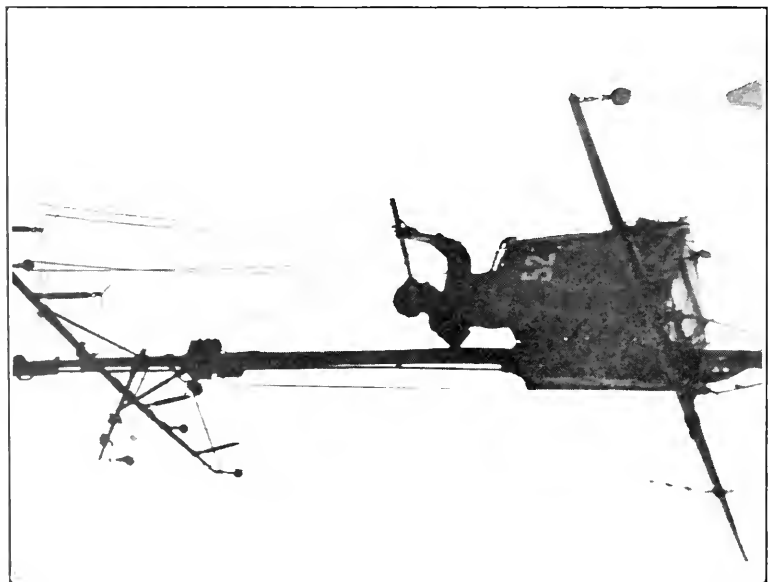


Photo by Underwood & Underwood, N. Y.

**ONE OF THE BEST DEFENSES AGAINST
THE U-BOAT**

The troop-messing job was so big that the Navy managed it as a separate enterprise in charge of the Bureau of Supplies and Accounts, which diluted and expanded the Navy's own commissary system to meet the necessity. In one particular, however, the troop mess differed from the sailors' mess: it was impossible to provide mess tables for the soldiers, if only because of the lack of room; and therefore all troops were fed by what was known as the cafeteria plan. On most of the transports, messing stations, or cafeterias, were set up both fore and aft. The equipment of a messing station consisted of tanks fitted with direct steam jets, in which reposed kettles, each one holding about seventy pounds of cooked food, brought from the galleys. The steam jets kept the food hot and palatable. At each station, too, was an auxiliary serving table with bread, butter, desserts, and other food to be eaten unheated. At the meal hour the lines of men, with their army mess kits in their hands, filed through the serving stations, where the food was dished out by mess details picked from the troops themselves. (The Navy never had enough men to spare any for this service.) The Navy bought and cooked the food and had it hot on the galley ranges, but it stopped at that point, and the traveling Army had literally to "come and get it."

The size and quality of the mess was determined by careful thought on the part of the Navy. A board of three expert ships' paymasters, those combination *maitres d'hôtel* and general business factotums of the Yankee men-o'-war, met, studied the problem, and drew up a standard bill of fare applicable to all transports. The bill provided a different menu every day for fourteen days and then repeated the series *ad infinitum*. There was therefore no monotony of dishes for soldiers crossing the ocean, although the standard bill of fare prescribed each day an identical menu for every transport at sea. The standardization of the menu greatly simplified the problem of purchasing supplies. The ration was bounteous; the Navy set no limit on the amount of food a man could have. Each mess kit, however, was so well filled at the first serving that less than one man in twenty returned for more.

The Navy was hard pressed to supply enough cooks for the work, although throughout the war the transport galleys, in addition to their proper function, served as classrooms and clinics for a student body of white-aproned abecedarians of stewpan and kettle who were being trained in mass cookery. On almost every voyage the navy mess organization had to call upon the passengers to supply auxiliary cooks and K. P. details. As a rule this auxiliary was of little aid during the first two or three days at sea, because it was commonly seasick; but the same waves that incapacitated the army kitchen details compensated for their unkindness by rendering delicate the appetites of most of the other passengers as well, so that the navy cooks unaided could then easily prepare all the food called for.

The American troop-messing system at sea was unquestionably superior to that of any other nation. Aside from the relative quantity and quality of the food supplied to our troops, the chief point of superiority in our system was that we separated the messing spaces from the sleeping quarters. On the transports of other nations the troops are fed right at their bunks, an arrangement neither sanitary nor appetizing.

American troops at sea were treated as though they were independent passengers who had paid for good service and were entitled to get it. In order that the navy officials in Washington might secure information about the quality of the mess from sources outside the *ex parte* reports of their own officers, the Bureau of Supply and Accounts installed on all the troop transports complaint boxes into which each soldier was not only permitted, but actually encouraged, to deposit whatever complaints he had in his system about the food. It is a tribute to the morale of the American Army as it journeyed to France that, in spite of the danger and discomfort of the eastward voyage, scarcely a complaint was made by the million men who crossed in our transports. After the armistice, on the other hand, when the troops were returning safely and in comparative comfort, and when the messing system was at its highest efficiency, the complaint boxes were not large enough to hold

all the kicks registered. The war was over, the tension and excitement were gone; the holy crusade had become the hegira of a homesick horde of American youths to whom the magic carpets of Bagdad would have afforded a mode of transportation none too swift—in short, the boys were in a captious frame of mind, for which they found relief in penning caustic critiques of the naval cuisine.

In discussing convoying, there is a constant temptation to refer to the transport *Leviathan*; for she was the largest of our troopships, and on her the travel figures attained the most mouth-filling size. The *Leviathan* carried an average of 10,000 troops, and she could serve a meal to them in an hour and fifteen minutes. The cooking facilities on the *Leviathan* as she came to our hands from the German ownership were sufficient to take care of 5,000 passengers and a crew of 1,000 men. These facilities we expanded to take care of 15,000 men, including the crew. In her commercial work the ship had operated seven complete kitchens, two of them kosher kitchens for Jewish immigrants. These two and the other steerage kitchens were ripped out, and all cooking was afterwards done in the first- and second-class galleys, these having been refitted with enormous steam kettles, each of which held 100 gallons of food, and also with automatic dough mixers, standard electric navy ovens, and other appliances for quantity cooking.

When the *Leviathan* was fully supplied with food for a voyage, her refrigerators and storerooms contained such items as 200,000 pounds of flour, 420,000 pounds of fresh vegetables, 175,000 pounds of fresh fruits, 60,000 pounds of tinned meat, 260,000 pounds of fresh meats, 30,000 dozen eggs, and 25,000 pounds of turkeys and other fowls. In all, she stored for the voyage about 2,000,000 pounds of provisions. This quantity was sufficient to subsist 10,000 troops for twenty-five days and a crew of 1,400 men for a hundred and twenty days. The excess food was to serve her in a possible emergency at sea. When she reached the other side all excess stores were unloaded, and she returned with only enough food aboard for the needs of the crew. Whenever she started out to France, she

carried enough provisions to supply ten battleships and one supply ship besides.

The entire load of enlisted troops on the *Leviathan* ate in a single mess hall. This was one of the large and splendid salons of the first-class accommodations. Twelve serving stations were set up at one end of the hall. At the mess hour the troops approached the hall in four lines, two from the forward end of the ship and two from the after end. The lines met at the head of the grand staircase leading down into the hall, and the men descended the stairs four abreast. At the foot of the stairs the column split into twelve ranks, which passed the twelve serving stations at a slow walk. By this system 9,000 men have been served in sixty-seven minutes. As the men ate, they moved slowly toward the other end of the mess hall, where they found great tanks, certain of which were filled with hot soapy water and the others with hot clear water. Here they washed and rinsed their mess gear; then they returned to their compartments by established routes.

On the *Leviathan*, as on all the other transports, the messing progressed under strict control, so that if the abandon-ship warning came during the mess hour, the men could move to their proper stations quickly and without confusion.

CHAPTER XXIX

ESCAPES AND LOSSES

THE attack on the first American troop convoy seems now to have been, of the planned and premeditated attempts on the part of the enemy to stop our eastward troop movement, the only one which came anywhere near to success. Yet there is no doubt that the German made, on more than one occasion, a determined effort to check with his submarines the influx of American troops which was inundating France and swiftly and surely destroying the morale of the German army. There is convincing proof enough, both circumstantial and direct, to assure us that in September and October, 1918, the chief business of the U-boats was to hunt for loaded American troopships; but they hunted fruitlessly. The convoy system afforded complete protection to the quarry.

It must not be assumed that our troop transports were immune from attack, for that would be far from the truth. Scarcely any of our forty or more troop carriers missed having their brushes with the submarines; and all these were exciting and dangerous. The encounters almost invariably occurred, however, in the approaches to our French ports, in waters a few hours' steaming from the safety of harbors. Outwit the U-boat as we might and did in middle ocean, there was no way of eluding it when our ships were nearing the European coast. All lanes at sea converged into one lane outside Brest or St. Nazaire, and the U-boat needed only to lie in wait on this lane to encounter everything that came along, whether cargo carrier or trooper.

But this very state of affairs was exactly what the enemy least liked. The U-boat commander much preferred to operate

far out at sea, for there in the deep water was comparative safety for him. In the shallow waters near shore he was fretted both from the air and from the depths, like a mackerel in danger from shark and osprey. He could be seen by observers aloft in airplanes or balloons; and when their signals had brought the destroyers, he had no defense except to lie quietly on the bottom sands and hope that the depth charges would miss.

It is evident, then, that the encounters with American troopships near the coast of France were more fortuitous than premeditated by the U-boat commander. Nevertheless, the submarine succeeded, in these chance attacks, in torpedoing five of our troopships. Three of the five, the *Antilles*, *President Lincoln*, and *Covington*, sank and were lost. The other two, the *Finland* and *Mt. Vernon*, fought back to port and safety. All five were on return voyages to the United States when struck, and were therefore carrying practically no military passengers.

July, August, and September, 1917, with their infrequent sailings, passed without serious incident. On September 24 there sailed from New York a convoy known as Group No. 8, which was destined to misfortune. There were four vessels in the group as it started from New York: the new navy transport *Henderson*, then setting forth on her third voyage; the transports *Antilles* and *Finland*, also on their third crossings; and the transport *Lenape*, on her second. The group had not proceeded far to sea when the *Lenape* developed engine trouble and was forced to turn back to the United States, bringing her troops with her. The other three transports crossed the ocean safely; but on their return trips the *Antilles* was sunk and the *Finland* was torpedoed. The *Henderson*, which was later to be one of the unluckiest ships in the whole fleet, was the only one of Group No. 8 to make that turn-around without mishap.

The *Antilles* sailed for the United States from Quiberon Bay on October 15. Quiberon Bay is a sheltered haven fronting Belle Isle, about fifty miles northwest of St. Nazaire and

the mouth of the Loire River. It was an assembling place for westbound convoys of American ships from St. Nazaire and the Gironde River terminals of the A. E. F. The *Antilles* started out in company with the *Henderson*, escorted by the converted yachts *Corsair*, *Canawha*, and *Alcedo*. Just at dawn on October 17 the *Antilles* was struck. Shortly before the attack occurred, a fire broke out in one of the staterooms on the port side of the promenade deck. The ship was completely darkened, so that it was difficult to locate the fire at first, and it gained headway. The smoke and excitement awakened everybody on board. The fire was under control, but the crew were still at their fire stations, when the officer on the bridge saw a torpedo wake headed directly at the ship. The men at the helm attempted to dodge the missile by a quick turn, but the vessel had not yet responded to the rudder when the torpedo struck, on the port side just at the after engine room. The whip of the explosion was so terrific that it lifted a lookout over the five-foot canvas screen about the main top and threw him to the deck below. He was killed by the fall. The explosion wrecked the after engine room completely, killing everyone in that compartment except one man, an oiler, who managed to escape through a skylight. The vessel listed and sank in less than five minutes. The gun crews sprang to their weapons, but they saw no submarine. The two forward gun crews remained at their stations while the ship went down under them. It was the quickness of the sinking which resulted in so heavy a loss of life—67 men killed by the explosion or drowned afterwards. Sixteen of these were soldiers returning to the United States. The *Corsair* and *Alcedo* rescued 167 men.

As soon as the *Antilles* was struck, the *Henderson* turned abruptly and made off at her best speed, dropping smoke boxes to screen herself from the submarine.

Eleven days later, on October 28, the *Finland* was torpedoed. She was returning to the United States from Brest. The explosion blew a great hole in her starboard side; it struck into a bunker, from which over 250 tons of coal dropped into the sea. The vessel's water-tight compartments buoyed her up,

and she got back to Brest under her own power, fighting off other submarines which thought to find her an easy victim in her disabled condition.

The next exciting episode occurred on November 9, 1917, when the *Von Steuben* and the *Agamemnon*, both of them ex-German ships making their first voyages to France loaded with troops, collided in the war zone and narrowly escaped disaster. The accident occurred just at dusk, that dangerous time when, from the vantage point of the periscope, ships are silhouetted sharply against the sky. The convoy, which consisted of the *Mt. Vernon* and the *America* in addition to the two ships named, was zigzagging when the *Agamemnon* and *Von Steuben* came together. Neither ship was badly damaged. The *Von Steuben* suffered the more damage; but she made port under her own steam, although unable to rejoin the convoy until afternoon of the next day. During all those intervening hours, she proceeded quite without protection.

No ship on the sea had a more stirring war career than the *Von Steuben*—the “*Vonnie*,” as our sailors affectionately nicknamed her. She had been formerly the *Kronprinz Wilhelm*. When the war broke out in 1914 she was at Hoboken. One dark night she slipped her moorings, glided through the cordon of Allied cruisers patrolling the ocean just outside the three-mile limit at New York, and for a year thereafter maintained a reign of terror at sea through her raids upon Allied merchant shipping. Month after month the stories of her exploits reached the United States. She kept herself supplied with food and fuel from the merchant ships which she captured and sunk; and she was so fast that she could show her heels to all the cruisers which the Allied navies sent after her. But at last the pursuit grew too hot; besides, she had been at sea so long that she was sadly in need of repairs. As a last display of audacity, her officers brought her to the United States, eluded the British cruisers off our coast, and took her safely into Newport News.

The *Agamemnon* was another famous ship, noted both for her work in our service and for her career as a merchantman

before the war. As the *Kaiser Wilhelm II*, named after the German war lord, she had been built to carry the emperor if he desired to travel; and she was fitted out and decorated with an ornateness exceeding that of any other German vessel. The cathedral glass windows of her salons showed scenes allegorical of arts, crafts, agriculture, and mechanics. Her fittings included the imperial suite, a group of rooms consisting of dining room, drawing room, and bedroom with bath, all furnished in keeping with imperial taste. In addition to this magnificent apartment, there were especially luxurious state-rooms for members of the emperor's party.

There was no further incident of consequence in our troop convoying until February 27, 1918, when the transport *Finland* collided at sea with the naval transport *Henderson*, starting the latter vessel on her career of ill luck. The convoy was returning to the United States from Brest. It was traveling at top speed, because it was in the heart of the war zone, only one day's run out from the coast of France. It was a dark, cloudy night. Just after midnight the steering gear of the *Finland* jammed, and she swung into the *Henderson*. The *Henderson* command tried with some success to avoid the collision, but the *Finland's* bow struck a glancing blow amidships. Good seamanship on the *Henderson* averted a real disaster. The unusual circumstance of a smooth sea on that February night enabled the crew of the *Henderson* to make emergency repairs before the leak made their ship unwieldy. The transport was carrying a number of wounded soldiers back to the United States.

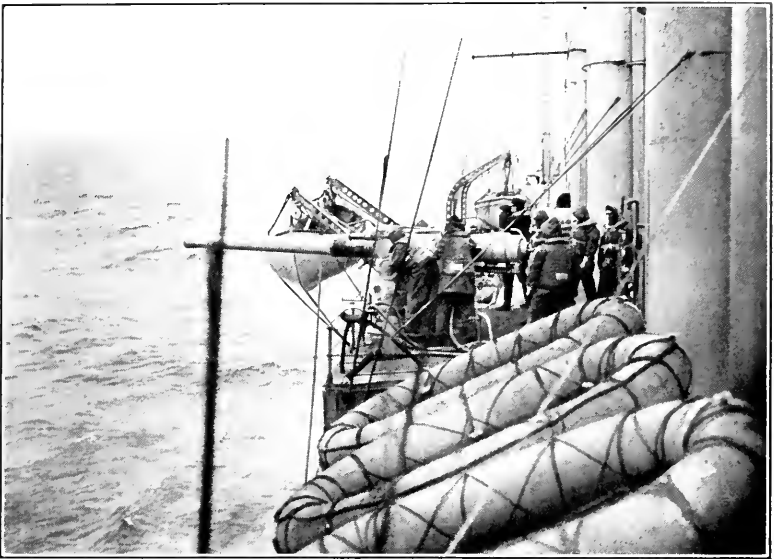
On the night of April 25, 1918, the transports *Æolus* and *Huron*, in an eastbound convoy two days out from Newport News, collided at sea with nearly fatal results. The transport *Siboney*, making in this convoy not only her first trip to France with troops, but also her first voyage of any kind, since she was then just out of the shipyard, was the cause of the accident. The *Siboney's* steering gear jammed, and her sudden sheer threatened the *Æolus*, which, steering clear of the danger, rammed the *Huron* amidships. Both vessels were severely

damaged, and there was an anxious hour in which it was not known whether either could remain afloat. Both transports, however, were able to get to New York, where their troops and cargoes were transferred to the *Manchuria*, the Atlantic transport liner that had just joined the troop fleet. The *Manchuria* sailed on her first voyage in a convoy which left New York April 30.

A month later we were to lose a second transport, the *President Lincoln*. At nine o'clock in the morning of May 31, in a homeward bound convoy which was 500 miles west of the coast of France and apparently this side of danger, the *President Lincoln* was hit almost simultaneously by three torpedoes, evidently fired as a salvo. Two of the torpedoes struck on the port side about 120 feet from the bow, and the other on the same side about 120 feet from the stern. The explosions so wrecked the ship that she could not hope to survive. The lookouts did not see the wakes of the torpedoes until it was too late to avoid them; the U-boat must have been close in when she fired. There were 715 persons on board, all of them belonging to the transport crew except thirty, who were officers and enlisted men of the Army. At the alarm everyone went without confusion to the abandon-ship stations. A rapid inspection showed that the ship was settling fast. The commander ordered boats to be lowered, life rafts thrown overboard, and all hands to abandon the vessel. Three officers and twenty-three enlisted men of the navy crew lost their lives.

After the ship had gone down, the submarine emerged, approached the boats and rafts on the surface, and, after some search, took on board and carried away as a prisoner a navy lieutenant, to serve as proof in Germany that the submarine had sunk an American troop transport.

As the *President Lincoln* sank she wirelessly her position; but her command knew that the nearest destroyers were 250 miles away, and that it might be several days before the survivors would be picked up. Therefore the word was passed that the occupants of the lifeboats and rafts were not to touch any of the supplies of fresh water and provisions, except as



U. S. Navy Official Photo

GUN CREW ON DESTROYER

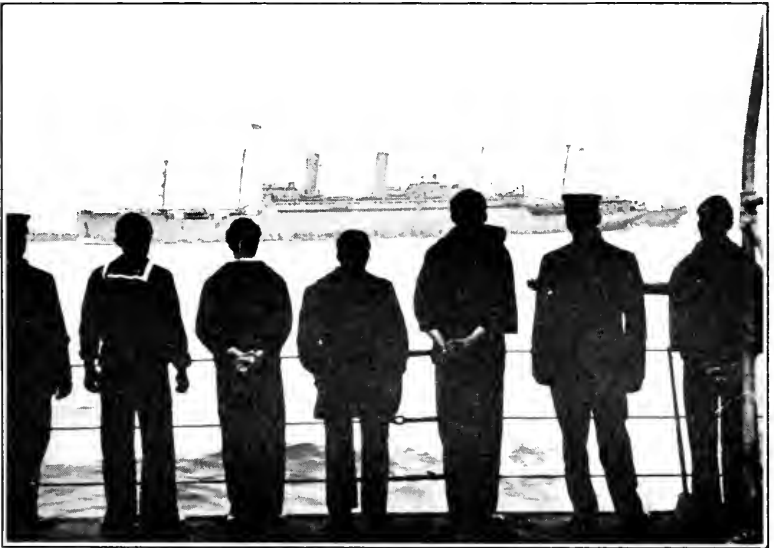


Photo by International Film Service

SAILORS WATCHING TROOPSHIP



U. S. Navy Official Photo

DESTROYER RACING TO ATTACK ENEMY SUBMARINE



Photo by International Film Service

GUN CREW ON AMERICAN TROOPSHIP *ORIZABA*

they were rationed by future orders. All day long the rafts and boats floated about the spot. Night came, and still there was no rescue. The commander detailed certain sailors to send up rockets and burn coston lights at intervals. About an hour before midnight the watchers descried on the horizon a white light, and in a few minutes the destroyer *Warrington* raced up at full speed. In another hour the destroyer *Smith* arrived. The two destroyers picked up the men from the boats and rafts and then waited for daylight to make further search for survivors. Finding none, about six o'clock the next morning they headed for France.

On June 16 occurred the first encounter of any of our troopships with an enemy submarine on the American coast. The ships attacked were a group of five—the *Wilhelmina*, *Lenape*, *Princess Matoika*, *Pastores*, and *Czar*—which had left Newport News the day before to join a group from New York. Because submarines were known to be operating off our coast, the Newport News group was escorted by a destroyer and three submarine chasers besides the usual cruiser, and the ships were zigzagging in war-zone fashion. About 7.30 o'clock in the morning several of the vessels observed the wake of a submarine and began firing at it. No torpedoes were seen, and the destroyer, which at once raced toward the submarine, was unable to locate it.

On June 18, 1918, the *Von Steuben*, then on her way to the United States for another load of troops, figured in an exciting submarine encounter in the war zone. The lookouts on the transport espied a cluster of lifeboats on the horizon, and the ship made for them. Almost at the same time a submarine was sighted near the lifeboats. Instead of running away, the *Von Steuben* steered straight for the U-boat and opened fire. Almost immediately a torpedo was seen coming directly toward the transport. Sharp work at the helm of the *Von Steuben* avoided the torpedo. Meanwhile the submarine had disappeared. This U-boat had sunk a ship and was evidently lurking in the vicinity to attack any other that might come to the rescue of the survivors—a favorite ruse of the submarine

commanders. Not content with forcing the submarine under, the *Von Steuben* steered directly for the spot where it had dived and, as she passed over the place, dropped several depth charges. The transport did not stop; but she sent a wireless appeal to an American destroyer in the vicinity to come and pick up the survivors of the sunken vessel.

The *Von Steuben* continually took part in exciting episodes. Her collision with the *Agamemnon* in the autumn of 1917 was the first of a series of adventures. After her just-mentioned brush with the U-boat she continued toward the American coast. Finding the vessel short of coal, her commander decided to go into Halifax, Nova Scotia, for additional fuel. The ship was about forty miles out of Halifax when, in water and air simultaneously, there was a concussion that shook the *Von Steuben* from truck to keel. In a few minutes those on board saw on the northwestern horizon a mounting dome of smoke. Was there a naval battle on ahead, or had a U-boat blown up some large ammunition dump? At any rate, the "*Vonnie*" headed directly into it. What she saw when she arrived at Halifax was the devastation wrought by the explosion of the French ammunition ship which had collided with the Belgian relief vessel in Halifax harbor—a disaster which caused the deaths of more than a thousand persons. The commander of the *Von Steuben* sent nearly all the ship's company to aid in the relief work, and the willing sailors dug and shoveled victims out of the débris, carried wounded persons to the hospitals, and cared for the homeless. The press censorship as to the movements and identity of vessels at that time was absolute; the dispatches told only of the fine relief work carried on at Halifax "by an American naval vessel." The vessel was the transport *Von Steuben*.

Securing her coal, at length the *Von Steuben* proceeded to New York, took on a load of troops, and on the 30th day of June departed for France in a convoy of fifteen troopships, eight of them from Newport News. This was Group No. 46, the largest single convoy of American troop transports that crossed to France. Next day the *Von Steuben* was to play an

important rôle in one of the most thrilling episodes of transport history.

Among the vessels of the convoy was the unlucky *Henderson*. Late in the afternoon of July 1 smoke was discovered coming from one of the forward holds of the *Henderson*; and within a few minutes the fire was out of control. The *Henderson* had on board some 1,500 sailors and marines as passengers. It was evident that these would have to be transferred to another vessel, and that at once, although darkness was then at hand. The *Von Steuben*, her quarters for 3,000 troops already crowded, stood by with two destroyers, the *Paul Jones* and the *Mayrant*; the other thirteen transports kept on. All that night, far out on the lonely ocean, went on the difficult task of transferring the passengers from one transport to another—a unique occurrence. Back and forth between the two drifting transports plied the destroyers carrying men, while the crew of the *Henderson* still fought the stubborn blaze in the hold. By morning the transfer was accomplished, and the *Von Steuben* sprinted eastward at the top of her great speed to catch the convoy on ahead. Her quarters were crowded as they had never been crowded before, but the passengers occupied the berths in twelve-hour shifts, and the *Von Steuben* delivered them all safely on French soil.

It needed so much water to put out the fire in the *Henderson* that the ship took a list of twenty-five degrees to starboard. She was in a serious plight. She received orders to proceed to Philadelphia for repairs. The two destroyers stayed by. All the sailors of the *Henderson*, except a skeleton working crew, were transferred for safety's sake to the *Mayrant*. Slowly the *Henderson* labored toward port. A thick fog settled over the ocean, adding to the perplexity of the navigators. Near the American coast a storm arose, and in the rising sea the ship suddenly keeled from starboard to port and turned almost completely over. Finally, on July 5, the *Henderson* passed in between the Delaware capes and was safe. She was repaired at Philadelphia in time to make three more trips to France with troops.

Coming around to New York from Philadelphia after being repaired, the *Henderson* sighted a submarine off the Jersey coast. She steered for it at full speed, passing through floating oil from the tanker *F. W. Kellogg*, which the submarine had sunk two hours before. The U-boat submerged, and the *Henderson* neither saw any more of it nor felt any collision; but some weeks later, when the transport was in dry-dock, it was discovered that her bilge keel was damaged. The submarine *U-139*, which was operating in American waters at that time, returned to Germany with her periscope broken and her conning tower bent by a transport which had rammed her at sea, as we learned after the armistice. It is probable that the *Henderson* was the vessel which wrought this damage.

July 1, 1918, was a disastrous date for the transport service; for, in addition to the burning of the *Henderson*, on that day we lost the transport *Covington*. The *Covington*, formerly the German passenger liner *Cincinnati*, sailed from Brest on July 1 in company with several other troop transports. The days were among the longest of the year, and in the high latitude of the French coast it was not until 9.00 p.m. that the sun approached the horizon. At exactly 9.15 a lookout on the *Covington* saw, a short distance off the port side of the vessel, a torpedo wake. Almost before any alarm could be given the torpedo struck, and the explosion threw a column of water as high as the smokestack. The *Covington* carried few passengers, but her crew numbered nearly 800 officers and men. Immediately after the explosion the engine rooms filled with water; and in fifteen minutes the ship lay dead on the surface, listing heavily to port and giving the impression that she might sink at any moment. The captain ordered the ship abandoned. The evacuation was carried out without lights anywhere, but in splendid order. The destroyer *Smith* took the entire company on board.

As the ship did not sink immediately, it was decided to attempt to salvage her. Meanwhile the destroyer *Reade* had arrived, and before dawn the wireless had brought three salvage tugs, which put lines on the *Covington* and started to

tow her toward Brest at five or six knots an hour. The *Smith*, having placed a small salvage party on board the *Covington*, returned to Brest with the rest of the crew. About noon, July 2, the stricken ship suddenly took an additional list until, heeled to an angle of forty-five degrees, she was manifestly sinking. Her commander then directed that the towing cease and that the working party leave the vessel. Twenty minutes before the *Covington* sank, all were taken off her. As the magnificent 17,000-ton liner finally went down, she rose to a vertical position, her bow pointing to the zenith and her hull so far out of water that the after smokestack was clear of the waves. After remaining in this position for about fifteen seconds, she slid rapidly from view. Of her nearly 800 officers and men, only six had been lost.

The next incident of note in troop convoying occurred on the night of July 14, when, in a thick squall which came just before midnight, the transport *America*, five days out to sea from New York, with over 4,000 American troops aboard, rammed and cut in two the British freight steamer *Instructor*, which was bound for the United States. Through the darkness and rain, the *Instructor* was dimly seen from the *America*; but the lookout was at first unable to make out what the object was. As the ships approached each other, the *Instructor*, seeing her danger, suddenly swung across the bow of the *America*. Running lights were turned on, and the helm of the transport was put down hard; but the collision could not be averted. The bow of the *America* struck the stern of the *Instructor* and literally sheared it off. The wrecked ship scraped along the port side of the transport, passed by the stern, and sank three hundred yards off. The *America* stopped, put down boats, and picked up eleven survivors; but no lights were turned on to aid the rescue, and after an hour of searching the *America* went on at full speed in an effort to rejoin the convoy, although cries for help still floated across the dark water as she left the scene. *C'était la guerre.*

For a month—and it was the heaviest month, too—of overseas travel, the convoying proceeded without unusual inci-

dent; and then, on August 11, there occurred the most resolute attempt made by the Germans throughout the war to destroy the troopships of an American convoy. On that Sunday morning, about 8.30 o'clock, a convoy consisting of the *Maui*, *Siboney*, *Orizaba*, *Calamares*, *Tenadores*, *H. R. Mallory*, and the Italian chartered troopship *Re d'Italia*, ran, probably by chance, into a nest of submarines in the heart of the European war zone, and, from that hour until after three o'clock in the afternoon, continually battled off the underwater craft. The five vessels had on board approximately 15,000 American troops. They left New York on July 31 as Group No. 53. On August 10 they successfully met the American destroyers from Brest at the rendezvous on the western edge of the war zone; and when attacked next morning they were proceeding at full speed on a zigzag course. The first attack occurred when a torpedo crossed the bow of the *Tenadores*, headed straight for the *Maui*. That vessel turned sharply, and the torpedo passed twenty yards astern. There were two other attacks during the day. The submarines which made them had probably been notified, by radio from the outer group, that a troop convoy was approaching. The troops who witnessed the encounters, the crews of the transports, and the crews of the escorting destroyers were all firmly convinced that the depth charges sank four U-boats that day, although there was no absolute proof of any sinking. After one well-aimed depth charge had exploded, the bow of a submarine was seen for a moment at the surface of the water.

Two days later the transport *Pastores*, approaching the American coast, was fired upon by the deck gun of a submarine from a great range. The transport responded with her two after guns. Altogether, twenty-four shots were exchanged—fifteen from the submarine, all of which fell short, and the rest from the transport. The *Pastores'* shell appeared to be dropping close to the U-boat when it suddenly gave up the battle and dived. Next day the *Pastores* docked safely at Newport News.

On August 17 a fifty-pound depth charge exploded on board the transport *Orizaba*, killing one officer and three enlisted

men outright, and inflicting severe injuries on nineteen other men. The *Orizaba* had been in the convoy attacked on August 11 and was on her return voyage to the United States.

On the morning of August 23, enemy submarines operating off the American coast attacked a convoy proceeding from Newport News to a northern junction to meet troopships from New York. The transports fired five shots at the submarine. At noon the two groups joined. That evening the combined convoy encountered a U-boat, and one of the destroyers dropped a depth charge, with unknown results.

On August 26 a U-boat attacked a large convoy of loaded American troopships about 1,000 miles out to sea from New York. One of the vessels of the group had been forced to drop behind because of a minor breakdown. The cruiser *North Carolina* stood by the disabled vessel and signaled to the rest of the troopers to proceed. The damage on the transport was soon repaired, and the *North Carolina* started at full speed to regain her position at the head of the group. It was just at sundown. Before the cruiser could overtake the ships, a submarine attacked the convoy, firing a torpedo at the transport *De Kalb*. The German marksmanship was poor, and no damage was done. The transport *Sobral*, steaming behind the *De Kalb* in the column formation, opened fire with two guns, with such effect that the submarine immediately disappeared, leaving an oil-slick on the water. The U-boat submerged before the *North Carolina* could get into action.

Toward the end of the war, although the enemy was making supreme efforts to sink our troopships, the convoys were relatively free from attack. On September 5, however, a submarine did succeed in torpedoing one of our transports, the *Mt. Vernon*, which was then 250 miles off the coast of France, proceeding to the United States, in convoy with the *Agamemnon*, at eighteen knots an hour. It was early in the morning; the sea was smooth and the weather fine. Suddenly a periscope appeared above the surface of the water, about 500 yards away. The starboard gun of the *Mt. Vernon* spoke immediately, one of the shots striking near the periscope. The next

instant a lookout saw the wake of a torpedo headed for the ship. Before the course could be changed, the torpedo struck the vessel amidships, with a terrific explosion. The blast went into four of the eight boiler rooms and flooded the entire midship section for a distance of 150 feet.

The vessel at once settled ten feet in the water, but stopped sinking three feet short of the point at which she would lose her buoyancy. This behavior indicated that the bulkheads were holding and that the ship might be saved. To avoid a second torpedo, the stricken transport began dropping depth charges at regular intervals. The barrage was evidently effective, for the enemy did not again show himself on the surface.

The lives of nearly all the men in two of the firerooms had been wiped out instantaneously; thirty-six were killed in the explosion. The conduct of the crew was admirable. The men in the uninjured firerooms kept at their work, although they were below the water line and, if the bulkheads should not hold, in a death trap. They kept the fires going, and the ship's speed never dropped below six knots an hour; eventually it was worked up to twelve knots. It was an axiom in the convoy service that one torpedo could not sink a transport if every man stayed at his post to help save the ship. In one of the after messrooms, a compartment below the water line out of which there was but one exit, a number of sailors were having breakfast when the *Mt. Vernon* was struck. There was a rush for that hatch, but one of the sailors jumped upon the steps and shouted, "Remember, boys, it is only one hit!" The effect of this utterance was instantaneous. The men calmed themselves and hurried, not to their boats to abandon the ship, but to their collision stations to save her.

On the transport, being brought home from France, were some 150 wounded soldiers. These unfortunate men were carried to the lifeboats, wrapped up in warm blankets, and served with hot soup and other refreshments. They remained in those comfortable and safe places until, eighteen hours later, the ship reached Brest.

The last accident to the troop fleet during the eastbound

movement occurred on the morning of October 15, 1918, when the transport *America*, without warning, sank at her pier in Hoboken. For some unexplained reason, the ship took a sudden list to port. The coalers had been working on her most of the night, and the coaling ports were left open. As she keeled she buried these apertures under water, filled rapidly, and sank. Numerous soldiers were asleep on the vessel at the time, and they and the sailors fought to get out. Six men lost their lives, and a million-dollar cargo of army supplies was ruined.

Not the U-boat, as it proved, but an unsuspected enemy was most fatal to our expeditionary soldiers on the ocean. The submarine was able to sink not one troopship on the way to France: the influenza epidemic of the autumn of 1918 cost the lives of over seven hundred American soldiers at sea. Thirty-eight troopships carried nearly 130,000 men across the ocean during the epidemic. The scenes aboard some of these vessels helped to make this phase the most terrible in the whole undertaking. Nearly 15,000 cases of influenza and pneumonia developed during the voyages. Nearly 3,000 sick men were removed from our transports at Halifax. Several hundred died there, and several hundred others died in France after being carried ashore, moribund. It is conservative to estimate that the influenza at sea cost, altogether, 2,000 lives. Many of the victims were buried at sea.

As soon as the epidemic grew serious in the United States, the War Department decreased the usual number of troops loaded on each transport by ten per cent. The need for soldiers in France would not permit an absolute quarantine of troops for the incubation period of the germ. To have imposed such a quarantine would have shut off embarkation altogether at a moment when the enemy was being beaten in France; a moment when the goal of a speedy victory made it imperative to send every man possible, at whatever sacrifice.

The brooding terror of the "flu trip," as it came to be called, pervaded a diary kept by a sailor on the transport *Wilhelmina*,

which sailed from New York in a convoy on the 28th of September. This is the picture he drew:

“October 3.—Last night two soldiers died, one with the flu and one with pneumonia. Work goes on just the same. No one seems to worry. The men have been embalmed and put in coffins and the coffins stowed away, and life for the living goes on just the same. Death has become such an everyday fact; the presence of the likelihood of death is always with us. It has lost some of its majesty and power to move us. Yesterday there was a burial at sea from one of the other ships. For the length of time it takes to read the burial service the flags on all the ships were set at half-mast. The body was consigned to the sea, and the flags were at mastheads again. For my own part, it was just as though I were in a big city, where the funeral of some one I do not know has very little interest. The procession passes, and I go on my way rejoicing in living. . . .

“October 4.—These are bad times. This is an ill-fated convoy. We have had nine deaths so far out of our 1,984 troops. The U. S. S. *President Grant* near us has to-day buried thirty-nine at sea. We have heard only rumors of what is the epidemic so flagrant on her, but yesterday the cruiser sent most of her surgeons back to the *Grant* with a new stock of drugs. Thank God! we are only a day out of France! More than likely it will mean quarantine for the ships, but that is better than being at sea where a disease once started soon becomes a plague. The *Grant* carries about three times as many troops as we do, but even so her death rate is fearful. . . . Their death list must amount to almost 100 by this time.

“There is a rule against burial at sea. All bodies are supposed to be brought back to the States and buried with military honors; but this is an emergency. The disease is contagious and must be checked. There is a shortage of embalming fluid also; so the bodies are wrapped in canvas, weighted, and made ready for burial at sea. We could very distinctly see the burial to-day. The one I watched, the colors on all the ships were set at half-mast. Nothing could be seen to happen for a while.

The service was being read. Then one after another the bodies were dropped over the side, each one wrapped in the colors for a brief moment before it went over. I counted fifteen bodies. I confess I was near to tears, and that there was a tightening around my throat. It was death, death in one of its worst forms, to be consigned nameless to the sea. . . .

“October 5.—Fifteen more bodies have just been buried from the *President Grant*. Fifteen were buried this morning. This brings her total deaths up to more than 100. [The deaths on the *President Grant* numbered 130 in all; no other transport had more than 100 deaths; and most of them had less than 50.] We have had eleven so far, with two of the crew on the very edge—one quartermaster and a cabin cook. Each body is wrapped in a flag before it is consigned to the sea. As the body goes over the side we can see the flag quite distinctly. Such a performance as the *Grant* has been giving us daily is one to harden one and yet to make one think. Every ship in the convoy has had a death.

“October 10.—We made port safely on the 9th. . . . What a nightmare of a trip it was! The deaths and the sickness among the troops; the helpless feeling one has when one is cooped up in a crowded space filled with disease rampant. . . . When we were coming into port the troops woke up sufficiently to shout answers to the cheers of the French, who lined the banks and welcomed us.

“Early that morning we had a funeral service for the soldiers who died *en route*. Thirteen caskets were placed on the after hatch and draped with the colors. . . . The minister was a private who had laid aside the cloth for the sword. He spoke beautifully and simply, words like those of Lincoln, yet everyone understood them and knew they were not mere eulogies, but the truth. What a picture! The land of France which they had come to save on the one hand, an island on the other, the column of ships of which we were the center, the half-masted colors, the bared heads of the men in khaki, and overhead a sky of gray.”

On the *Leviathan* ninety-four men perished of the plague

during that fatal voyage. The vessel sailed from New York late in the afternoon of September 29 with more than 9,000 troops aboard, besides the crew of approximately 2,500 men. The troops embarked full of the infection. Before morning every bunk in the available hospital quarters was filled, and many were lying sick in the regular quarters. A troop compartment containing 200 standee bunks was immediately cleared out and turned into a sick bay, and all of these berths were filled in a few minutes with men, some of them picked up on the decks in a dying condition. Next day a larger section, one with 415 bunks, was improvised as a hospital; and this, too, was filled immediately. On October 3 a further section containing 463 bunks was turned over to the sufferers. Only eleven army doctors remained on their feet to care for the hundreds of patients.

Seasickness, fright from being shut up in contact with a fatal epidemic, and the lassitude caused by the disease itself combined to create in the sufferers an inertia amounting almost to stupor. Many a sick man lay in his bunk without complaint and without anyone's being aware of his condition, until pneumonia had set in and he was at the point of death. Many of those brought into the improvised hospital died within a few minutes after being placed in bed. There were probably quite 2,000 cases of the malady on board, although in the confusion no accurate count was made. The system of admitting men to the hospital bays broke down because of the dearth of executives to administer it. Men who felt ill from any cause simply walked into the wards and climbed into any berths they could find empty. Some of these men were doubtless suffering from nothing graver than fright and seasickness; but others died in the troop quarters, and no one knew they had been sick.

The epidemic came at a time when the authorities were reaching out for any troops they could get to keep the ships filled. The troops on board the *Leviathan* were largely drafted replacements, men who had been in the military service only a few days. It was useless to attempt to maintain discipline

among these soldiers during the panic which the epidemic caused. One piece of morning routine on each transport was to detail cleaning parties from among the troops to clear out the sleeping quarters and put them in good condition for the day. On the *Leviathan's* third morning at sea, the officers were confronted by a fear-begotten mutiny among these green soldiers. They refused to go down into the holds, bring out the dead and dying, and make the quarters sanitary; and not even the threat of extreme measures could drive them below. The command of the vessel was forced to assign squads of sailors to keep the sleeping places respectably clean.

The first death on the *Leviathan* occurred on October 2, the third day at sea. Next day there were three deaths, and the following day seven. On the 5th of October ten succumbed; on the 6th there were twenty-four more deaths; and on the 7th, the day the ship reached Brest, the high mark of thirty-one deaths was reached. Among the hundreds of cases were 200 men desperately ill, if not dying, of pneumonia and influenza. Next day the embarkation authorities began removing these to the hospitals at Brest, but not before fifteen more deaths had occurred. Many of those who were moved died in the shore hospitals.

Frightful as the influenza at sea was, neither the morbidity nor the mortality was so high among the 130,000 troops who crossed the ocean during that interval as it was in the training camps in the United States. The War Department is not open to the criticism that it sacrificed the lives of nearly 1,000 men to place 129,000 others in France, although the need of the A. E. F. for troops at the time was so great that even such a sacrifice would have been justified. The only measure which could have prevented influenza at sea would have been a twenty-one-day quarantine at the port of embarkation, which would have stopped embarkation entirely for three weeks. Judging by the statistics of the epidemic at the established camps, it is probable that if the troops had been held in quarantine more of them would have died than actually did die on the way across the ocean.

CHAPTER XXX

THE CARGO CONVOYS

AT the opening of hostilities in 1917, both the Army and the Navy were confronted with the necessity of sending cargo transports across the Atlantic. The Navy began dispatching its war vessels to bases in England and France and setting up aviation stations at various points on the European coast, all of which enterprises required the transatlantic shipment of large quantities of naval supplies. And the Army was forwarding troops to France and contemplating the day when 2,000,000 American soldiers would be on French soil—a force which would require for its maintenance the transatlantic shipment of 10,000,000 tons of supplies every twelve months, or five tons of supplies *per capita per annum*.

In setting out upon their war freight enterprises, each of these services, the Army and the Navy, began operating its own cargo transports independently of the other's. The Navy acquired cargo boats, put crews on them, and sent them guarded across the Atlantic; and the Army did likewise, except that the army cargo ships were sent under navy protection. In July, 1917, as we have seen, the two services came to agreement on a rule that all American troopships in the army service should be operated at sea exclusively by the Navy. This agreement was soon to be followed by another which placed in the Navy's hands the operation of most of the Army's chartered cargo transports.

Circumstances necessitated this *modus operandi*. As soon as the Army tried to operate cargo ships, it bumped into trouble. The main difficulty was crews—obtaining them. The embarkation organization struggled along until, one Saturday morning in September, 1917, it reached the limit of its ability



U. S. Navy Official Photo

ON *MT. VERNON* IMMEDIATELY AFTER TORPEDOING



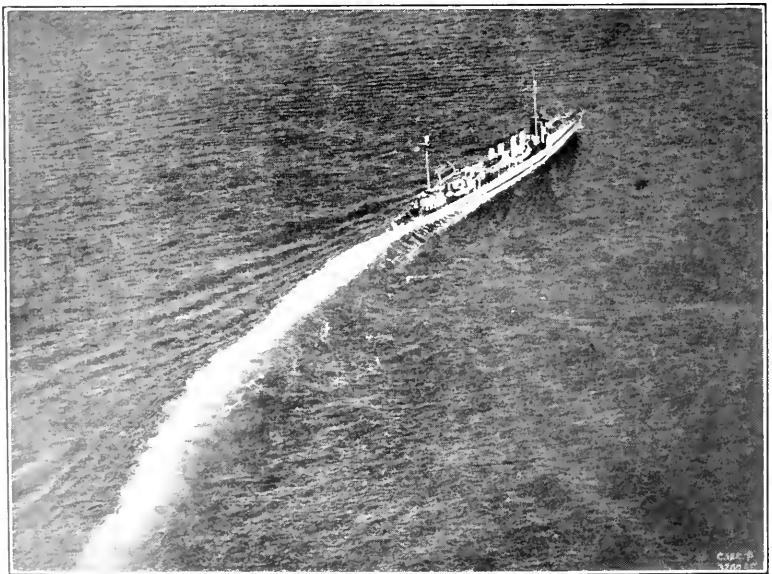
U. S. Navy Official Photo

GUN CREW OF TROOPSHIP IN ACTION



Photo by Signal Corps

AMERICAN CONVOY IN WAR ZONE



British Official Photograph

AMERICAN DESTROYER IN WAR ZONE. PHOTOGRAPHED FROM DIRIGIBLE

to find sailors. At the dock lay a big cargo transport loaded and scheduled to sail in a convoy on the following Monday; but there was no crew aboard, no crew in sight. The Army appealed to the Navy for help, and got it. When the convoy sailed, forty-eight hours later, the cargo transport was in it, fully manned. The crew was in uniform, for it was composed of commissioned officers and enlisted men of the naval establishment.

Such labor crises became frequent as the autumn advanced. Each time, the Army turned to the Navy for help, and each time the Navy produced a crew without undue difficulty. Then, just before Christmas, 1917, both services came to a formal agreement that thenceforth the Navy should supply crews for all troopships, animal transports, and cargo transports obtained by the War Department on charter from the United States Shipping Board, the chief and almost the only source of army cargo tonnage. The agreement, of course, applied only to bare-boat charters, and for special reasons some of the transports of even this class were operated by the Embarkation Service or by the Shipping Board itself; but the general rule was that the Army should turn its cargo boats over to the Navy for operation as fast as it chartered them.

Now, the army cargo transports were not the only American vessels which sailed through the war zone in the cargo convoys. The Shipping Board operated numerous commercial vessels in the essential trades of Europe. Other shipping board vessels normally visited South America and other countries remote from the submarine danger, but occasionally voyaged to Europe in the cargo convoys. A civilian ship in a convoy was often a vexation. The civilian captains and sailors did not have that meticulous regard for orders and discipline which the Navy knew to be essential to the safest possible operation of cargo boats in convoy through the submarine zone. A merchant crew was ever likely to show lights at night, or permit funnels to belch smoke and advertise the presence of the convoy for miles in every direction, or become slovenly in following a zig-zag course. A single careless ship in a convoy endangered the

safety of all the rest. Therefore the Navy wanted to eliminate as many civilian crews as possible from American freight ships running in the convoys.

Early in 1918, the Navy accordingly came to the following terms of agreement with the United States Shipping Board:

1. All troopships and hospital ships to be manned by the Navy. (With a few exceptions, this was already being done.)
2. Freight vessels engaged in the service of the War and Navy Departments to be manned as desired by the respective departments employing them. (In connection with the previous agreement with the War Department, this provision meant the manning of practically all such vessels by the Navy.)
3. Commercial vessels engaged exclusively in trade to ports within the war zone to be manned by the Navy. (This clause referred particularly to food ships.)
4. Commercial vessels engaged occasionally in such trade, but generally to ports outside the war zone, to be manned as far as possible by merchant seamen.
5. Commercial vessels engaged exclusively in trade to ports outside the war zone to be manned by merchant seamen.

The two agreements placed in the hands of the Navy the operation of a great fleet of ships; one which was to become the greatest merchant fleet ever assembled under a single management. Up to the date of the agreement with the Shipping Board, the great Bureau of Operations of the Navy had taken direct charge of the occasional manning and operation of cargo ships turned over to it by the Army. This bureau managed all our battleships and other war craft, a job big enough in itself; and when the Navy also assumed responsibility for much of the American merchant fleet in the transatlantic trade, the Bureau of Operations created within itself a special branch whose sole duty was to operate the government cargo boats. This branch was called the Naval Overseas Transportation Service, or, familiarly, N. O. T. S.

The supply of crews for the cargo ships was perhaps the chief problem in the operation. America had not been a seafaring nation since the days of the Baltimore clippers; and

when, in 1917, the American merchant marine began its expansion, there were not enough American sailors to run the ships, nor could wages at sea entice men in sufficient numbers from the various war industries on shore. The Navy, however, could utilize the appeal to patriotism, which was stronger than the lure of wages; and by enlisting men in its service and putting them into uniform it was able to secure a superior personnel for all the ships under its jurisdiction.

It was especially hard to obtain officers, whether for decks or for engine rooms. First of all, the Navy went to the merchant trades of the United States for ships' officers—to the Great Lakes ore and coal trades, to the Atlantic and Pacific coastwise trades, and to the blue-water shipping. But all of these trades put together, if they had handed over all their officers, would not have been able to furnish a quota sufficient to command the vessels then coming under the operation of the Navy alone. Nor could the Navy spare officers from its own trained forces, for the fighting fleet was also expanding, and all warships were short-handed. There was nothing for it but to create deck officers and engine-room officers for the new transports out of green material; in short, to train recruits in intensive schools.

The Naval Reserve supplied many of the transport officers. They came from every trade and profession and locality—down-east fishermen from the New England coast, farmers from the wheat ranches of the Northwest. As the candidates reached the various naval training stations, experienced navigators picked out the likely ones and assigned them to various transports and commercial vessels for cruises. In this preliminary training, the students were known to the seafaring world as cadet officers. The brief, but practical, sea experience at an end, the cadet deck officers went to the training station at Pelham Bay, New York, where for two months they dug into the mysteries of Bowditch and such special navy subjects as ordnance and signaling. The Pelham Bay Training Station graduated its first class in November, 1917, a class of fourteen men; and every month thereafter there was another com-

mencement day, the largest graduating class numbering 472 men. Stevens Institute in New Jersey maintained an engineer officers' training school, and at the Carnegie Technical Institute at Pittsburg was a school for the training of cadets in the operation of marine turbine engines. Just before the armistice, the Great Lakes Training Station at Chicago opened a training course for transport deck officers.

The Naval Overseas Transportation Service placed on each cargo ship that it operated a crew which averaged eleven officers and seventy men. This complement was larger than ships of similar size would normally carry. War-zone service demanded large crews. The Navy put plenty of radio operators on each transport and also used the ships as training schools for student firemen and oilers, who were counted in as members of the crews. Also each N. O. T. S. freight vessel carried two guns, and the two gun crews averaged fifteen men, with five recruit gunners in training. As soon as the armistice was signed, the gun crews were removed, and the average N. O. T. S. crew was reduced to eleven officers and fifty men.

The Naval Overseas Transportation Service came into existence on January 9, 1918, and took over the operation of seventy-two vessels, of which only ten were for army account. On the date of the armistice, N. O. T. S. vessels exclusively engaged in carrying supplies to the A. E. F. numbered 213; and the Navy's own cargo fleet had grown to large dimensions. In addition, the N. O. T. S. was operating a great many ships for the United States Shipping Board; so that, in all, there were 450 vessels in the N. O. T. S. fleet, and 109 others were under orders to be so commissioned. These ships were manned by more than 4,000 officers and 28,000 enlisted men. Not one of the officers had been in the regular Navy before 1917, and not more than one in five had ever served on ships before.

The work of the N. O. T. S. fell into three classes: (1) the transportation of supplies to the A. E. F.; (2) the transportation of coal and oil and under-water mines for American naval purposes abroad; and (3) the transportation of food cargoes to Europe and the Near East, and the transportation of a num-

ber of cargoes for the United States Shipping Board to various other quarters of the globe.

The actual loading of the ships and the discharge of their cargoes were attended to by the Army or Shipping Board. The Navy manned, repaired, bunkered, and furnished supplies to the ships and operated them at sea.

The agreements which gave the Naval Overseas Transportation Service exclusive operation of A. E. F. supply ships were never carried out to the letter. The Army itself manned thirteen vessels in the supply trade, and the Shipping Board sixty-five; and the Army secured 129 ships through the Shipping Board on time-form charters, such charters implying the operation of the ships by their private owners with civilian crews. Of the 320 American ships in the A. E. F. supply service, the Navy operated approximately two-thirds; and it carried to France about sixty per cent of the A. E. F. supplies, these shipments amounting to nearly 3,000,000 long tons of army cargo.

Other N. O. T. S. vessels carried to Europe almost 1,000,000 additional tons of supplies for the American naval bases there—a figure which does not include fuel. Included in the cargoes of naval supplies were the tens of thousands of American-built mines with which Admiral Joseph Strauss constructed his famous Northern Barrage in the North Sea.

The more dangerous war cargoes that crossed the ocean were usually carried in N. O. T. S. ships. These cargoes consisted of the thousands of tons of depth charges for the American destroyers abroad, whole shiploads of T. N. T. and other explosives for the Allied ammunition pool, and deckloads of cylinders filled with the deadliest of poison gases. Gas was usually shipped on an N. O. T. S. carrier, because the strict discipline on such a ship ensured the safe handling of this dangerous commodity. Every man on a gas ship was forbidden to come on deck without a gas mask.

Week in and week out throughout the war, the N. O. T. S. ships sailed through the most dangerous waters of the earth, steaming at an average rate of eight knots an hour, a speed

which made them fair game for any U-boat that encountered a convoy. There was no more dangerous service at sea than that of operating a slow cargo boat through the war zone. Yet the losses, whether from torpedoes or from natural accidents, were exceedingly slight. The wonder is that there were not more accidents. If in normal times the master of a vessel went to the owner and informed him that as soon as he passed Sandy Hook he intended to put in with all the other vessels in sight, instead of giving them a wide berth, and that he was going to hug in closely to the group on the way across the ocean, and run zigzag at full speed day and night through fog or fair and with no navigation lights showing in the dark, the owner of that ship would doubtless commit the navigator forthwith to a psychopathic ward for observation. But that was just what convoying meant. The chances which had to be taken by ships in a convoy would turn a sailor's hair gray in normal times. Yet the navy navigators of the N. O. T. S. vessels, many of them fresh from inland pursuits, grew so expert in maneuvering ships in convoy that accidents were few and far between. Of 450 vessels in the N. O. T. S. fleet, only eighteen were lost—four per cent of the total; and of the eighteen, only eight fell victims to German mines or submarines. Four went down after collisions at sea, and the rest were accounted for by fire or by stranding.

The director of the Naval Overseas Transportation Service was Rear Admiral Hilary P. Jones, who also commanded a division of the Newport News cruiser squadron.

The convoying of cargo ships was the measure chiefly responsible for the defeat of Germany's submarine campaign. There has been considerable discussion as to who should receive the kudos for the adoption of the convoy system. Was the idea born in England or in the United States? Americans need not fear that debate. The fact remains that convoying was not attempted until after the United States entered the war. America, as soon as she became a belligerent, began urging convoying as a substitute for the system of controlled sailings which the Allies had inaugurated as their chief defense against

the U-boat. The chief opposition to convoying resided, not on the American, but on the European side of the Atlantic. The Secretary of the Navy, Mr. Daniels, in his report for 1918, names President Wilson as the pioneer convoy advocate whose opinion carried most weight. It is no secret that the President, as soon as the Germans announced their policy of unrestricted submarine warfare, clearly saw in the convoy system the means of defeating that policy. When he signed the war resolution, he was ready to insist that the convoy be at least given a trial.

The most valid objection was that the convoying of cargo vessels would measurably decrease the carrying efficiency of the merchant marine. At a time when the ravages of the U-boats were striking terror to the hearts of the world, to some it seemed a suicidal thing arbitrarily to cut down the carrying power of the remaining tonnage by perhaps as much as one-third. These objectors were principally Englishmen. We must remember in their behalf that upon the efficiency of the merchant marine they were dependent for the very bread that went into their mouths; whereas we, with our ample domestic sources of food and of other necessities unaffected by the conditions of ocean shipping, were in a position to view the matter with a certain academic calm.

For other reasons, too, let us forbear to press down the bays too firmly upon our own brows. Many of the men highest in the councils of the British Government were as firmly convinced of the wisdom of convoying as were our own officers; but before April 6, 1917, they might have been unanimous in their opinion and still have been unable to put convoying into effect. The British naval policy was to maintain a preponderant fleet in compact battle array, ready to move out instantly against any naval excursion from Helgoland. This the British alone could not have done, in addition to furnishing protection to convoys. It was a question of which was the more important. Certainly the Allies could not have risked even the possibility of a German naval victory, for that would have ended the war forthwith. Not until America brought into the war her great fleets of dreadnoughts, cruisers, and destroyers

did the anti-German forces at sea possess the strength to confront the German battle fleet with invincible power and still have enough additional vessels to furnish protection to the shipping of the world, organized in convoys.

When the United States entered the war, shipping was being given protection—or at least what was called protection—by destroyers and other anti-submarine craft which patrolled a system of zones marked off in the approaches to the European ports. The American destroyers that went to England in the spring of 1917 at once fell in with this scheme of operations, under the command of a British admiral at Queenstown. Each group of destroyers had a definite area to patrol; each destroyer its own square, analogous to a sentry's beat. All merchant vessels then sailed singly, but each proceeded under the strict control of the British Admiralty, which prescribed in great detail the route it should follow into port.

The routing of merchant ships was, in fact, one of the more important elements of the zone-patrol system. To handle this work the Admiralty created an organization of local routing officers, stationed at the principal ocean ports of the western world. All Allied ships approaching the war zone sailed under route and navigation instructions furnished them by these British port officers. The port routing officers were principally retired ship captains, men of great maritime experience. The various shipping guilds of the United Kingdom selected them for the Admiralty, which commissioned them as commanders or captains in the Royal Navy Reserve. These routing officers stationed in neutral countries, which then included the United States, were sent there as naval vice-consuls and served ostensibly as civilians. After we declared war in the spring of 1917, the British port officers in the United States put on their uniforms and openly became officers in an important branch of the Royal Navy.

The Admiralty provided all merchant navigators with the secret marine war literature, which ensured that the measures of safety employed on all ships would be uniform and complete. When a merchant vessel, coming in from sea, reached

the submarine zone, theoretically it fell in with a destroyer, which escorted it across a certain zone and then delivered it to another destroyer in the next adjacent area. So the merchant vessel was passed along by these marine traffic policemen until it came safely to port.

The system, however, was only theoretically effective. A merchant ship might come into a destroyer's area when the destroyer was already engaged in escorting another vessel, and then the new arrival would be left without protection. It was entirely possible for a ship to go clear through the war zone without ever seeing an escort; and only too often these unprotected ships fell victims to the U-boats. Moreover, although all ships approached port on prescribed routes, there were so many ships at sea and so many routes in use that a submarine could cruise at random and expect at any hour to come upon a merchantman. The patrolled war zone afforded good hunting for the submarines. In April and May, 1917, the sinkings approached the million-deadweight-ton mark monthly—a rate which, if the U-boats could keep it up, was bound to end the war in favor of Germany before the next snow fell.

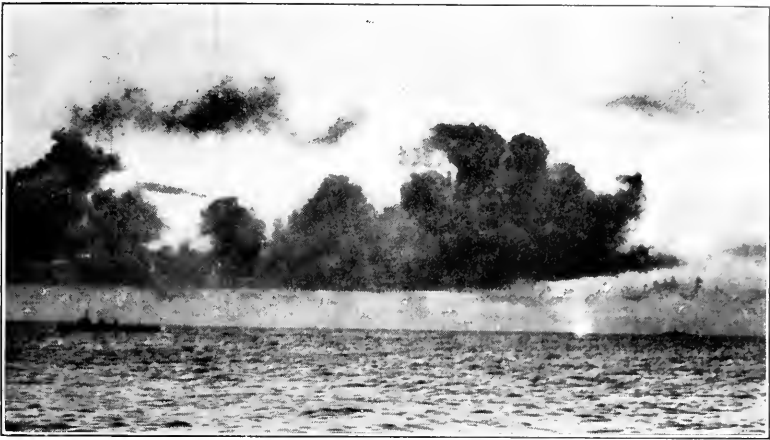
Even in this crisis, the decision to adopt convoy sailing came only after considerable governmental travail. The objection on the score of shipping efficiency was a serious one. Under the convoy plan, a vessel could no longer proceed to sea as soon as she was ready; she must wait for the convoy sailing day, which came along only at intervals. Moreover, not often could a fast vessel use her full steaming power; she must slow down to the established convoy speed, necessarily determined by the slowest ships. Certain objectors maintained that conveying would be equivalent to taking one-third of the total existing tonnage out of commission. The actual results of conveying showed that the curtailment in sailing efficiency was not so severe as this estimate, but it did amount to more than twenty per cent. The reply to the objection was, of course, that the U-boats, at their April rate of effectiveness, would soon put a fifth or even a third of the existing tonnage on the bottom of the ocean for good, and after that would continue to make heavy inroads

upon the remainder of it. The convoy did indeed cut the freighting efficiency of the merchant marine, but it saved it from being destroyed at a ruinous rate, and it allowed the new shipbuilding to gain on sinkings.

A vociferous objection to the convoy plan came from the British merchant sea captains. It was all very well, they maintained, for naval officers, accustomed as they were to squadron maneuvers at sea, to talk about convoying; but as for merchant ships, they would never be able to sail in groups as was planned, without an accompaniment of collisions whose aggregate of destruction would be greater than the depredations of the U-boats themselves. The British merchant mariners, and those of other nations, too, were later astonished by the proficiency which they acquired in formation sailing.

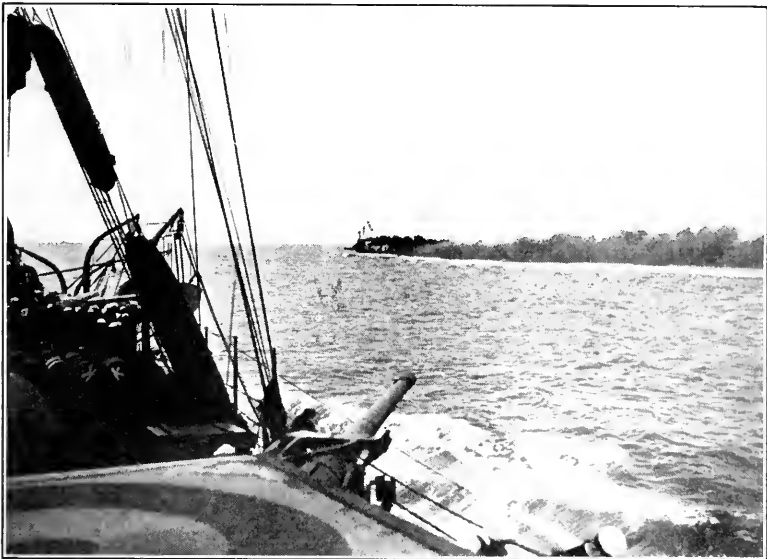
Until the last few weeks of the war, the British directed and commanded all the American cargo convoys, including the convoys of ships carrying supplies to the A. E. F. We organized the American troop convoys ourselves, from the very first expedition; we grouped the troopships, laid down the rules for their protection, escorted them across the ocean, and protected them in the submarine zone. But the convoying of our cargo ships, whether those ships carried naval or civilian crews, we left to hands more expert in ocean shipping than ours. In 1917 there was just one institution on earth competent to conduct such an immense undertaking as the administration of world marine traffic as a unit, and that institution was the British Admiralty. For many months, American participation in the management of convoying consisted in sanctioning the plans of the Admiralty and furnishing armed protection for the ship groups. The American cruisers and destroyers assigned to the service received their orders from British officers.

Such an arrangement could not be permanently acceptable to America. In so far as ships carried supplies for civilian consumption in Europe, we were willing enough to allow the British to conduct the convoys from America, even if the convoyed ships flew the Stars and Stripes; but our ideal was to



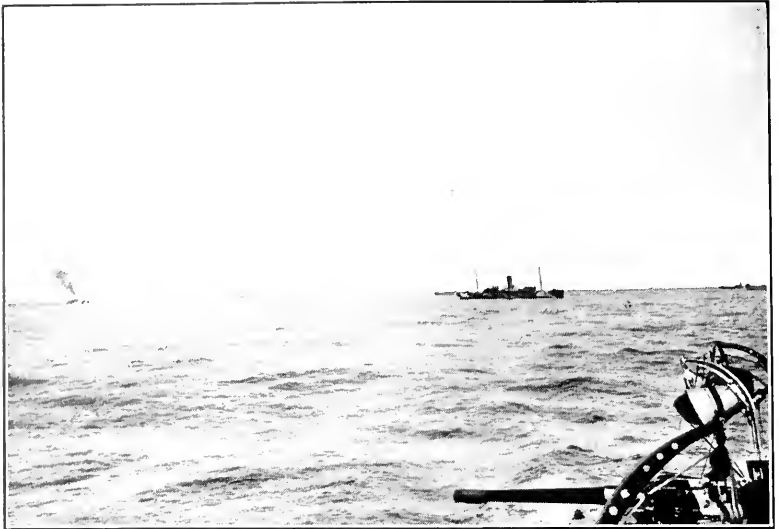
U. S. Navy Official Photo

SUNRISE IN WAR ZONE. DESTROYERS JOINING CONVOY



U. S. Navy Official Photo

**DESTROYER MAKING SMOKE SCREEN TO SHIELD
CARGO CONVOY**



U. S. Navy Official Photo

CONVOY AS SEEN FROM FLANKING DESTROYER



U. S. Navy Official Photo

DESTROYERS LEADING CARGO CONVOY

maintain the A. E. F. cargo supply line across the Atlantic as an all-American institution. As soon, therefore, as the Naval Overseas Transportation Service was established, a group of its officers began studying the science of merchant conveying, to the end that we might eventually be able to assume complete management of our own overseas army cargo movement. By the fall of 1918, we were ready to apply our newly gained knowledge. The Naval Overseas Transportation Service established a convoy office in Washington, stationed American convoy officers at New York and Newport News, and on September 18, 1918, sent the first American-operated cargo convoy out from New York for Bay of Biscay ports. This convoy was Group HB-14, a designation which will be clear to the reader later on when he has had an opportunity to examine the world convoy chart. The American convoy rules were identical with those of British convoys. HB-14 was the first cargo convoy operated by any country other than Great Britain.

If, in the months prior to the complete adoption of merchant conveying, there had been reasons for a centralized control of ocean shipping, those reasons were multiplied by the conditions of conveying itself. Vessels in convoy ran without navigation lights at night, and the cargo convoys were large; sometimes they consisted of upwards of forty vessels in each group. If one group were to meet another head-on at night or in a fog, or if two groups were to come to a crossing of sea lanes at the same time under like conditions, the consequences might be appalling. It was evident in 1917 that England was the only nation fitted to attempt this control. The safety of convoys at sea depended largely on the completeness of the secret information upon which the central convoy office based its orders. London, always the chief center of marine news, became during the war the great clearing house for intelligence as to the activity of U-boats. The British Navy's own intelligence service was highly efficient. The Admiralty's information was so complete that it always knew approximately the whereabouts of every German U-boat operating at sea; it usually knew the U-boat's individual identity and even the

name of its commander. The British war literature for merchant navigation was as complete as ocean experience could make it. Moreover, the British code systems of secret communication at sea had been brought to an advanced development. For such reasons, the management of the world's cargo convoys, regardless of the flags under which the component vessels sailed, fell, as it were by default, into British hands. England showed that her title of Mistress of the Seas was no empty name; for when the hour of peril came, when the safety of civilization depended upon the ability of man to operate his merchant shipping as a unit, the only seat of the requisite ability was the Admiralty in London.

The other nations at war with Germany, including America, willingly acceded to this alien control of their tonnage and maintained in London their several naval organizations to unite the shipping of the world in the single enterprise. The Admiralty in turn established its branch convoy offices in the principal ports of the North and South Atlantic Ocean and along the Mediterranean Sea; and these offices organized and instructed the convoy groups, fixed routes, scheduled the departures, and otherwise carried out the orders from London.

Thereafter the convoy office in the Admiralty became like the office of the chief dispatcher of a transcontinental railroad system, except that the traffic managed by it was vastly greater than that of any railroad on earth. The ocean commerce of the world was directed and guided through narrow channels, and its progress scheduled from day to day, by this mighty system of dispatch. The convoy might originate at Rio de Janeiro in Brazil, or at Dakar on the west coast of Africa, at Port Said on the Suez Canal, at Bizerta in Tunis on the Mediterranean coast of Africa, at Newport News in the United States, or at Halifax in Canada; but the sailing date of each group was so fixed, its progress so controlled, its route so charted, that not only did it run clear of other groups, but it arrived at the war zone just at the hour when there were destroyers available for escorting it through the dangerous area, and it distributed itself among the ports of England

and France just when those ports had dispatched the vessels of the preceding convoy.

The Admiralty operated a total of twenty-six main lines out of the central station, as we may call the ports of France and of the British Isles, collectively. These lines were known generically as "convoys," and the formations of ships which sailed on them as "groups." Those convoys which ran across the Atlantic, or Atlantic-coastwise in Africa and Europe, were given distinguishing letters, and the groups in each convoy lane were numbered serially. The group sailings on the routes were at intervals as regular as the departure of passenger trains on a railroad. Not counting the cross-Channel coal convoy, with daily sailings, and the English-Scandinavian convoy, with eight group sailings a month, from twenty-five to thirty-five convoyed groups of vessels arrived in English and French ports every month—about one group a day. They came from both Americas, from Africa (west coast), and (*via* Gibraltar) from the Mediterranean and the Suez Canal. The schedule of world convoys was as follows:

TRANSATLANTIC

<i>Port of Departure</i>	<i>Destination</i>	<i>Convoy identification letters</i>	<i>Group sailing interval</i>	<i>Speed</i>	<i>Warship escort</i>
Halifax (Sidney in summer)	West coast of England	HS	16 days	200 miles per day	British
Halifax (Sidney in summer)	East coast of England or France	HS	16 days	200 miles per day	British
Halifax or Quebec	East coast of England or west coast of Eng- land	HC	16 days	11½ knots per hour	British
New York	West coast of England	HX	8 days	300 miles per day	British- United States
New York	West coast of England	HN	8 days	228 miles per day	British- United States
New York	East coast of England and France	HN	8 days	228 miles per day	British- United States
New York	French Bay ports	HB	8 days	200 miles per day	French- United States
Hampton Roads	West coast of England and east coast of England	HH	16 days	200 miles per day	British
Hampton Roads	France	HH	16 days	200 miles per day	British

ATLANTIC COASTAL

<i>Port of Departure</i>	<i>Destination</i>	<i>Convoy identification letters</i>	<i>Group sailing interval</i>	<i>Speed</i>	<i>Warship escort</i>
Dakar	England	HD	8 days	170 miles per day	British
Gibraltar	England	HG	8 days	170 miles per day	British-United States
Sierra Leone	England	HL	8 days	240 miles per day	British
Rio de Janeiro	England	HJ	8 days	170 miles per day	British

ENGLISH-FRENCH COAL TRADE

(These convoys ran both ways)

<i>Port of Departure</i>	<i>Destination</i>	<i>Convoy identification letters</i>	<i>Group sailing interval</i>	<i>Speed</i>	<i>Warship escort</i>
Penzance	Brest	No letter designation	Daily	6 to 8 knots per hour	British-United States
Portland	Cherbourg	No letter designation	Daily	6 to 8 knots per hour	British-United States
Southampton	Havre	No letter designation	Daily	6 to 8 knots per hour	British-United States

MEDITERRANEAN

(Under British administration at Malta. These convoys ran both ways)

<i>Port of Departure</i>	<i>Destination</i>	<i>Convoy identification letters</i>	<i>Group sailing interval</i>	<i>Speed</i>	<i>Warship escort</i>
England	Port Said	No letter designation	16 days	10½ knots per hour	British-United States
Gibraltar	Genoa	No letter designation	4 days	8 knots per hour	United States
Gibraltar	Bizerta	No letter designation	4 days	8 knots per hour	United States
Bizerta	Naples	No letter designation	4 days	8 knots per hour	Italian
Marseilles	Algiers	No letter designation	8 days	12 knots per hour	French
Marseilles	Bizerta	No letter designation	5 days	12 knots per hour	French
Port Said	Bizerta	No letter designation	5 days	8 knots per hour	British
Port Said	Milo	No letter designation	5 days	8 knots per hour	British
Port Said	Malta	No letter designation	5 days	8 knots per hour	British
Malta	Bizerta	No letter designation	5 days	8 knots per hour	British
SCANDINAVIAN					
Humber	Lerwich	No letter designation	8 days	8 knots per hour	British-United States
Methil	Lerwich	No letter designation	8 days	8 knots per hour	British-United States

Convoy HX, which ran between New York and the English west coast, its groups sailing under joint British and American escort, was one which carried hundreds of thousands of American troops to Europe, for the HX convoy groups were made up entirely of passenger liners which Britain threw into our troop service. These groups sailed at eight-day intervals. Some of the British liners loaded with American troops—those which took on the troops in Canadian ports, for the most part—sailed in the HC convoy, from Quebec or Halifax to England. HC groups left only at sixteen-day intervals, and almost invariably cargo vessels joined them, for the sailing speed was relatively slow—eleven and one-half knots an hour. The Admiralty permitted a maximum of fourteen troopships in an HC group and attempted to limit the number of cargo vessels in the group to eleven—twenty-five ships in all—but this limitation was seldom practicable, and as many as forty-six vessels sailed in one HC group, several of them troopships loaded with American soldiers.

The group speed prescribed in the schedule was supposed to be the minimum which the ships must maintain at sea, but a cargo group was seldom able to keep up to even the minimum. The schedule, however, allowed from twelve to thirty hours for unavoidable delays, so that the groups, even when late, seldom had any difficulty in meeting the destroyers at the rendezvous in the war zone.

The rules of convoying were as rigid as the laws of the Medes and Persians. Every group sailed exactly on the day scheduled; and if a vessel were not ready to accompany the group, it was required to wait until the next sailing day. Each convoy group was commanded by an officer known as the group commodore. He was invariably an officer commissioned in the British Navy. A transatlantic cargo group that included ships with supplies for the A. E. F. carried in addition, as vice-commodore, an American navy officer, who, when the group split up in the mouth of the English Channel, took command of the American segment and controlled its movement until the ships were safely in the French ports.

Group-routing orders went out from the Admiralty to its far-scattered convoy officers in one of the most secret of all the war codes. The commodore was the only man in a group of cargo ships at sea who knew the route to be followed. Day by day he issued sailing directions to the ships of his flotilla by visibility signals—flags and semaphores during daylight, and even blinker lights at night; for the rule was strict against the use of wireless by ships in convoy, except to broadcast the news of the presence of a submarine. The Admiralty kept in touch with each convoy commodore at sea by wireless, employing a most abstruse cipher. Though each group route was charted in advance, it might at any time become advisable to change it, because of the shifting positions and concentrations of enemy submarines at sea.

The submarines could not conceal their positions. They betrayed their location every time they attacked a vessel; for the vessel, even though sunk, was usually able to radio the latitude and longitude. Moreover, like kind Mr. Alligator in the Hindoo tale, every U-boat at sea obligingly revealed its whereabouts each evening when it got in touch with its base by radio.

America and the Allies possessed a wireless direction-finder which was of use in the war in more ways than one. These finders, known as goniometers, could tell within a few degrees of accuracy the direction of any station from which wireless impulses were being sent. The A. E. F. and other armies in France used goniometers extensively as a valuable aid to military intelligence. For instance, if a net of enemy wireless stations in a certain sector began to diminish in number and at the same time a new net began to make itself evident in a position to the rear, it did not require any wizardry of ratiocination to deduce that the enemy was probably about to retreat and was setting up his wireless net in the position where he would halt. Instruments embodying the same principle came to have a valuable use at sea. Each night the various U-boats in the Atlantic came to the surface and reported to their bases. Every Allied and American merchant ship, war vessel, and

patrol craft carried a radio direction-finder. A good wireless operator could instantly recognize the German submarines' radio impulses. He could not understand the cipher, but that made no difference. The operator determined with his instruments the direction from which the U-boat impulses came and wirelessly the intelligence to the Admiralty in London. As soon as two reports upon any one submarine were received, the Admiralty officers needed only to trace out the two direction lines. Wherever they crossed, there or thereabouts was a U-boat.

The convoy system, as applied to cargo ships, forced the U-boats to operate in the comparatively shallow waters of the approaches to the Channel and to the principal English and French ports. The first effect of convoying that an observer stationed 200 or 300 miles at sea would have noticed was that shipping seemed suddenly to disappear. In the days of individual sailings through the approach zones, there was scarcely a spot within half a thousand miles of the European coast at which a U-boat, sticking up its periscope at any hour, would not have had good chances of seeing a steamship. No waters of the world were so crowded as these. Then, when the convoy system went into effect, shipping seemed suddenly to have been obliterated from the face of the waters. The sea became deserted in appearance, simply because the ships which had once been scattered far and wide were now collected into compact groups; and on any lane the groups came along only at considerable intervals. A submarine far out at sea in search of prey might range there for days without seeing a single vessel. Therefore the U-boats were forced to operate close to land, where all the convoy routes converged and ship groups passed almost daily.

This situation brought about a great increase in the destruction of the submarines themselves. Convoying, by constricting the area of effective submarine operation, enabled the Allies and America to concentrate and intensify the patrol of the zones, both on the surface and in the air. The shallowness of the water permitted an effective use of aircraft. There were

few places in this area in which a U-boat could hide from the vision of observers aloft in airplanes or balloons.

The system resulted in making the coastal waters of France and England more perilous to coastwise shipping than they had been. No U-boat commander fancied a brush with the heavy and deadly escort thrown about a group of overseas merchant ships. But the associated navies did not have enough war vessels to protect European coastwise traffic. A considerable part of the maritime losses in the later months of the war consisted of coastwise vessels torpedoed from submarines. These were small boats, as a rule, more easily spared than ocean-going ships.

Convoying reduced the overseas shipping losses approximately ninety per cent. Where, in the spring of 1917, the U-boat had been destroying ten ships, after the convoy system was perfected it could torpedo and sink but one. And the convoy system gave the ship owners of the world a sense of security that they did not have when vessels sailed independently. The result was that a large amount of tonnage, particularly neutral tonnage, which had been tied up in port for safety, went boldly forth to sea in the convoys—an important addition to the freighting capacity on which depended the success of the Allied cause.

CHAPTER XXXI

THE TECHNIQUE OF CONVOYING

TO handle the convoys from the United States to Europe, the British Admiralty established the American and West Indian Naval Station, the commander-in-chief of which became chief convoy officer. He maintained his headquarters on *H. M. S. Warrior*, a converted yacht, which during the principal period of convoy history was stationed in the Potomac River at Washington, D. C. To complete the liaison between the two navies, one of his staff officers had a desk in the American Navy Department. The chief convoy officer had command of all escort ships, both those of Great Britain and those assigned by the United States to the cargo convoy service.

At each of the two American ports whence convoys departed for Europe—New York and Newport News—the Admiralty stationed port convoy officers. These were high-ranking officers in the British Navy. The captain of a ship scheduled to sail in a convoy, upon receiving notification of the assignment, at once gave the port convoy officer a statement of the size and tonnage of his ship, the composition of its cargo, its destination, and other data used by the convoy officer in placing the ship properly in the convoy.

The make-up of a group of vessels was never left to chance or postponed until the ships assembled; it was carefully thought out and rehearsed in advance. There was a reason for every ship's position in the group. Heavy ships were never placed in column immediately behind light ones, because when the convoy slowed down or stopped, as it was sometimes necessary to do, the heavier ships would hold their momentum, or

way, as sailors call it, longer, and might even collide with ships ahead. Heavier vessels were usually at the heads of columns and lighter ones in the rear.

There were numerous other considerations which influenced the composition of a group in convoy; and once the group was properly formed, it was expected to maintain the integrity of its formation until it reached its destination. Ships that carried particularly valuable cargoes or had troops aboard were placed in the more protected positions—usually in one of the interior columns, if the group ran, as was usual, in four columns, and not at the head or at the rear of the columns. Ships with the most guns, or with gun crews noted for the accuracy of their fire, were placed in the wing or outside columns, so that in a brush with U-boats their shooting would not be obstructed by intervening hulls. Animal ships usually traveled at the rear ends of columns. In heavy weather it was necessary for these vessels to find the easy going, for their hatches could not be battened down tight without suffocating the dumb brutes stalled in their holds. In the rear positions these vessels could cut the corners in zigzag sailing, and otherwise pick the courses easiest to sail.

The group commodore selected for his flagship the vessel whose captain had the most experience in running in convoy and whose signaling equipment was the most complete. The flagship, of course, led the group. Ships were positioned in the group according to their destinations abroad, those scheduled to be first to leave the group sailing at the rear. The usual procedure for an American convoy was to stay together as a group until well up in the English Channel. There the group split, and one section steamed on to ports on the west and east coasts of England, while the other, composed of vessels carrying army supplies to the American bases on the Gironde and Loire rivers, turned southward under American and French escort and followed the coast of France down to its destinations. If the group were properly formed, it could divide itself up readily, without a halt in a dangerous vicinity in order to re-form into new groups. After the U-boats began operating

off the American coast, vessels bound for South America and other parts of the world outside the European war zone frequently attached themselves to convoys outbound from our ports, for the sake of the protection they would receive while running through the American war zone. Such ships traveled at the rear ends of columns, so that when the group reached the safety of mid-ocean they could drop off without causing confusion.

Before a group sailed, the master of every cargo ship in it received oral notification of any special procedure to be followed during that voyage; and all masters were also rehearsed in the standard rules of convoying and of self-protection, until the group commodore was convinced that every mariner under his command was thoroughly indoctrinated in them. This instruction was given in that marine institution of notable memory, the convoy meeting.

The convoy meeting was held on the morning of the day before a group was to sail. All masters of merchant ships assigned to the group, and also the commanders of the naval vessels in the group's escort, met at the office of the port convoy officer. On the wall hung a large blackboard. On this the convoy officer diagramed the group formation, placing each ship in it just as it was to proceed at sea, so that each mariner present might see with his own eyes exactly what vessels were to be in front of him and what ones behind, and where he was to sail in relation to his neighbors to starboard and port. Each captain received a sealed letter containing the group route instructions. This he was not to open unless he became hopelessly separated from the group; but in that event he might open it and attempt to reach the destroyer rendezvous with the group. He also received a slip of paper telling him the hour and place for the group to assemble for the voyage.

Officers of the embryonic American convoy office sat in the convoy meetings to look out for the interests of American vessels and to make sure that all American ship masters in the group were familiar with the procedure.

The chief radio operators of the ships in the group also

attended the convoy meetings. To them the full radio procedure at sea was read and thoroughly explained, no matter how familiar it was to every one of them. The system took nothing for granted. Several radio codes and ciphers were used. The merchant ships in the convoy used the code of the so-called mercantile tables. If, however, any merchant ship wished to communicate with a naval officer or vessel, it used another secret system known as the convoy cipher. The rules required each commodore to carry with him always a small library of war manuals, consisting of the various code books and maritime instruction books, and to be familiar with the contents of these documents. Each mercantile captain was ordered to have with him at sea a copy of the mercantile convoy instructions, the Allied signal manual, the wireless instructions for merchant vessels, and the mercantile code tables. Masters of British vessels carried, in addition to these documents, a publication called *War Instructions for British Merchant Ships*. The American Navy issued to all American ship captains a document almost identical in text and illustration, entitled *War Instructions for United States Merchant Vessels*.

The governments took unusual precautions to prevent any of the secret convoy publications from falling into the hands of the enemy. The printed *War Instructions* were bound in sheet lead covered with buckram. The lead cover would sink the book if it were tossed overboard. Every copy of the *War Instructions for United States Merchant Vessels* was registered and numbered, and every man who received one was required to return it to the Navy Department or give good evidence that it had been completely destroyed. After the armistice the Navy Department incinerated all copies of this document except one, which is being retained for possible use in some future submarine war.

Each master was expected to provide for his ship a canvas bag to contain all confidential books and papers. This bag was weighted with lead at one end and was perforated with eyelets to ensure rapid sinking; moreover, it laced shut, so that there was no cover to open and allow secret papers to float

out. U-boat commanders sometimes boarded captured ships or searched the surface of the waters to discover anything of value. Therefore the *War Instructions* forbade ships' officers to write down any confidential information on their vessels' logs. If a ship were fatally torpedoed or about to be captured, it was the master's first duty, and a duty not to be delegated to anyone else, to burn the sealed letter containing the group route instructions.

These and many other matters of operation were rehearsed at the convoy meetings. Indeed, our Government regarded the convoy meeting as so important a part of convoying that it permitted no American vessel to sail in a group unless its master had attended the meeting or unless a convoy officer had personally instructed and examined him in the procedure to be followed at sea.

The process of forming a group at the assembling place and of getting under way was as follows:

The vessels moved into the assembly area flying their position signals, so that each ship might identify the others and roughly assume its own place in the formation. At the hour scheduled for departure, the commodore's flagship proceeded at slow speed past the grouped vessels and stood out to sea on her base course. The other ships fell in line behind her according to the formation plan; and when all were in their proper places, the flagship steamed ahead at the speed fixed for the group.

Immediately after departure, the port convoy officer cabled to London a report that gave the following details:

- (1) The convoy destination, the serial number of the group, and the names of its ocean escort vessels.
- (2) The day and hour of sailing.
- (3) The various latitudes at which the route would cross the 70th, 60th, 50th, 40th, and 30th meridians west of Greenwich.
- (4) The expected time of arrival at the destroyer rendezvous.
- (5) The names and nationalities of all ships in the group, their positions in the formation, and the destination of each one. This information was cabled as in the following illustration:

THE ROAD TO FRANCE

<i>Column</i>	<i>Nationality and name</i>	<i>Destination</i>
I	U. S. <i>Glacier</i>	Southampton
	British <i>Pollarden</i>	London
	Etc.	Etc.
II	Norwegian <i>Palfarili</i>	Havre
	Etc.	Etc.

- (6) The commodore's flagship, with the name of the commodore.
 (7) The vice-commodore's ship, with the name of the vice-commodore.

Besides proceeding with an ocean escort of at least one cruiser, each group that left our shores received special escort protection through the American coastal waters; an escort which was especially strengthened after the U-boats began operating off the American coast. As an example of this protection, consider the departure of Group HX-50, which left New York on September 25, 1918, at 3.00 p.m. The world convoy schedule makes it clear that this was the fiftieth group to run in the HX convoy, which was the British fast-liner convoy carrying American troops to ports of debarkation on the west coast of England. Although the coastal protection given to troop convoys was stronger than that thrown about cargo groups, the protection system was essentially the same for both sorts of groups.

HX-50 was a group of twelve British liners and an escorting cruiser, scheduled to cross the ocean at the rate of thirteen knots an hour. On the liners were nearly 20,000 American soldiers. The vessels of the convoy, with their numbers in the group, were as follows:

- | | |
|--|------------------------|
| (1) H. M. S. <i>Otranto</i> (ocean escort) | (8) <i>Briton</i> |
| (2) <i>Teucer</i> | (9) <i>Oxfordshire</i> |
| (3) <i>La Lorraine</i> | (10) <i>Scotian</i> |
| (4) <i>Kashmir</i> | (11) <i>Orontes</i> |
| (5) <i>City of York</i> | (12) <i>Saxon</i> |
| (6) <i>Oriana</i> | (13) <i>Plassy</i> |
| (7) <i>Rhesus</i> | |

All of these were British ships except *La Lorraine*, a French liner.

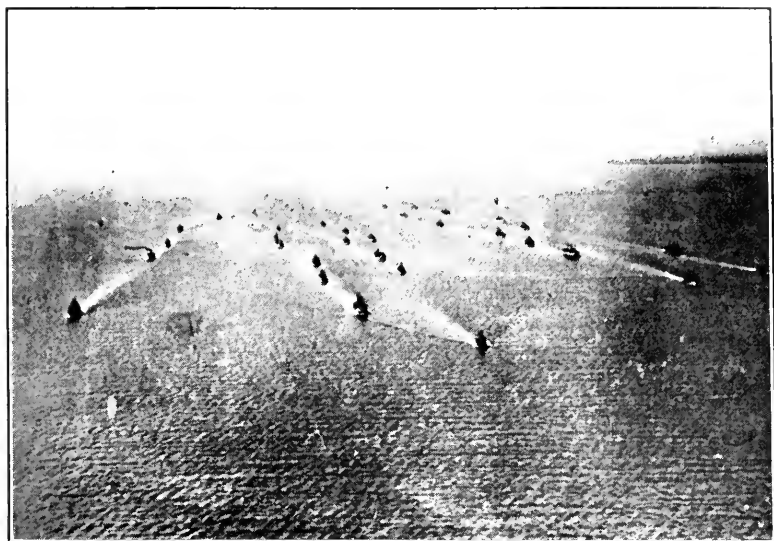
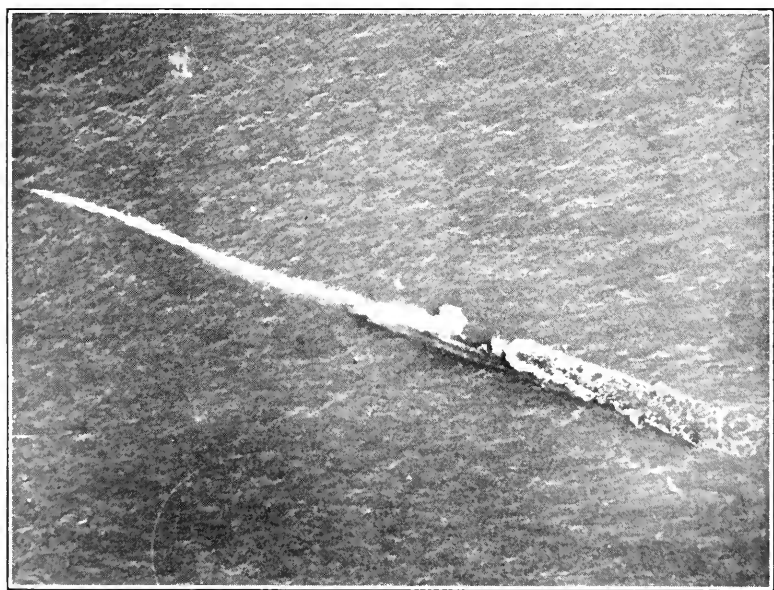


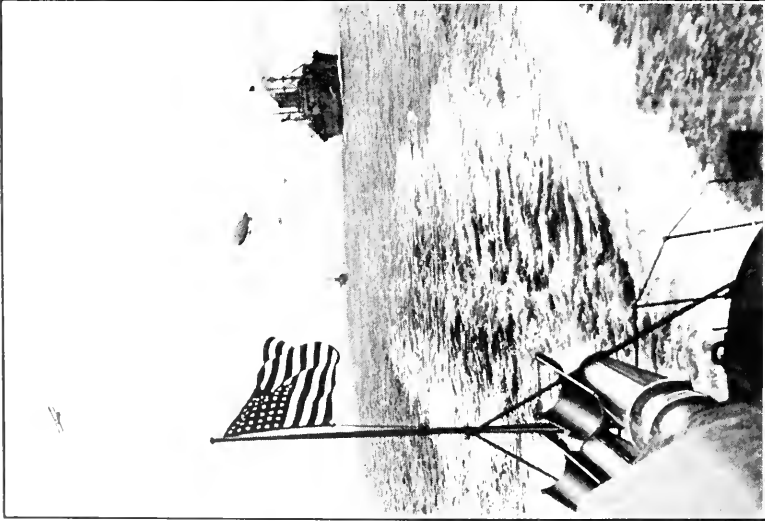
Photo by International Film Service

**AËRIAL VIEW OF AMERICAN CARGO CONVOY NEARING
ENGLISH COAST**



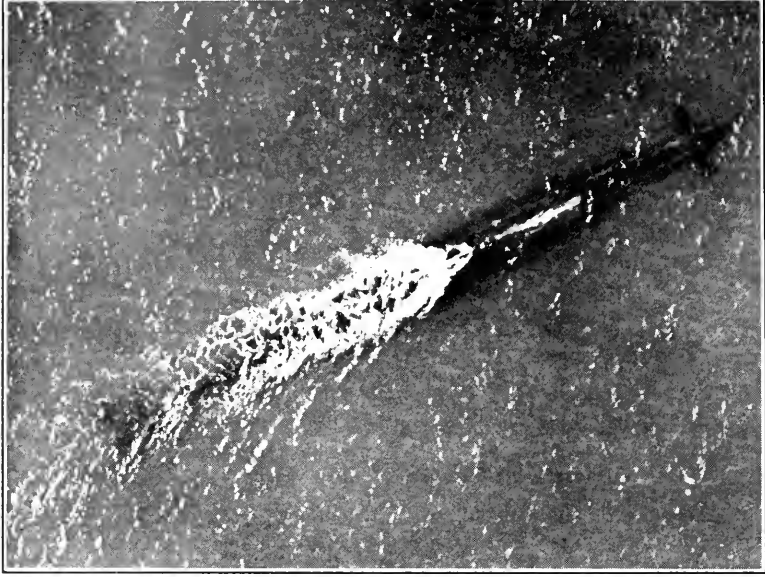
U. S. Navy Official Photo

AËRIAL VIEW OF SUBMARINE DISCHARGING TORPEDO



U. S. Navy Official Photo

**AÉRIAL PROTECTION TO TRANSPORTS
NEAR COASTS**



U. S. Navy Official Photo

**SUBMARINE WITH PERISCOPE AWASH,
AS SEEN FROM AIRPLANE**

The group traveled with a strong ocean escort. Besides the *Otranto*, there were the American cruisers *St. Louis* and *Louisiana*, assigned by our own Cruiser and Transport Force to aid in protecting the group as far as the European war zone. The American destroyer *Dorsey*, then under orders to join the destroyer force abroad, also traveled with the group as an escort ship.

Bright and early on the morning of September 25, the patrol boat *Tarantula* set out to sea from the Ambrose Channel Lightship. In the scheme of coast protection, the *Tarantula* was designated as the listening vessel for that day. It was her duty to proceed over the route which the group of troopships would follow eight hours later. She was to steam at ten knots an hour, and every now and then stop her engines to allow her officers to listen for submarines. The *Tarantula* carried listening gear which could detect the presence of a submarine moving anywhere within a considerable distance.* At a point about twelve hours' run to sea, the *Tarantula's* commander was instructed to stop the engines altogether and remain on the position listening for submarines until the convoy had passed on.

At daybreak that same morning, three pairs of mine sweepers started out from the Ambrose Channel Lightship, and cleared a two-mile path for eighteen miles to the eastward, marking the northern edge with buoys, one every two miles. This was a daily procedure, whether any convoy groups sailed or not. Each evening the sweepers returned to port, picking up their buoys on the way in.

Another protective vessel which preceded the main group to sea was the patrol boat *Xarifa*, whose chief piece of equipment was a captive balloon. The observers aloft in the balloon searched the sea with their glasses for evidence of U-boats.

*Listening devices and submarine detectors came in for much attention on the part of inventors during the war. Of many devices submitted, none proved to be of great value as an instrument of offense, because none was accurate in pointing to the position of a submarine. Of all the U-boats sunk, only one is believed to have come to its end through the instrumentality of listening gear. Indirectly the gear was valuable, because it put the offensive forces on the alert in the general presence of a U-boat.

They communicated with the *Xarifa* by telephone, and the patrol boat was equipped with a wireless set with which to communicate with the convoy group. The *Xarifa* started out from the lightship at noon, three hours ahead of the group. Against the tug of her balloon she could not run fast, and her orders were to continue over the route until it was dark or until the troopships had passed her and gone over the horizon.

While the troopships were assembling in their group formation at the Ambrose Channel Lightship, the harbor entrance patrol was at work. On the afternoon of September 25, 1918, the patrol consisted of the guardship *Gloucester*, towing an observation balloon, the *Bagley*, a patrol boat, also with a captive balloon, and the patrol boat *Natoma*. The air patrol over the channel consisted of one of the navy dirigible balloons and three navy seaplanes.

As the group, with its ocean escort of one destroyer and three cruisers, left the lightship, the destroyer *Perkins* of the coastal escort ranged out to starboard of the group at the head of the column. Farther back on the right flank was the submarine chaser 52-58-89. The left flank of the column, the shore side, was guarded by the S. C. 57-61-88. The two submarine chasers kept on with the group until they reached the 100-fathom curve, where they turned back. The *Perkins* accompanied the convoy throughout the night and turned back to port at daylight the following morning.

At sea all convoys followed routes similar to that laid down for our first troop convoy. The western terminal of the convoy lane proper was about 250 miles from the American coast. This terminal was called Position No. 1. The convoy commodore led his ships on a direct line from port to this position. Therefrom the convoy lane led across mid-ocean, passing through at least one fixed position to the final position, which was the eastern terminal of the lane proper. This position was considerably to the westward of the war zone. The next position through which the group must pass, no matter how much it might zigzag and divert its course in reaching it, was the appointed place of rendezvous with the destroyers sent out

from the bases in Europe to meet the ships. The meeting usually occurred on or near the thirtieth meridian, west longitude. The commodore could choose his own route from the eastern terminal of the convoy lane to the destroyer rendezvous, but he usually followed the great circle as the shortest distance. The Admiralty in London designated a special rendezvous for each group and, four or five days before the group sailed, communicated this position secretly to the commodore. Convoy lanes did not follow regular trade routes, but traversed parts of the ocean which were normally deserted. Each convoy lane was sixty miles wide, so as to allow for slight changes in routing within it.

At or before the time the group met the European destroyers, the cruisers of the ocean escort turned back and proceeded to Halifax or to Newport News. The convoy rules did not permit escort cruisers to go on with groups after the European destroyers had arrived; nor in any event were the commanders of the cruisers allowed to proceed east of longitude 15 degrees west, whether the destroyers had arrived or not.

After the group, now under destroyer protection, reached the mouth of the English Channel, any ships which might be bound for Biscay ports turned off to the southward, escorted by destroyers and patrol boats. Vessels bound for English west-coast ports received the protection of destroyers. Those for English east-coast ports, after detaching themselves from the group, proceeded up the Channel guarded by commissioned escort vessels, patrol boats, and trawlers.

At the Allied and American seats of government there was a constant fear that the Germans might adopt the policy of sending out cruisers to raid our convoys; and there was perpetual readiness to send battleships to the protection of convoys on short notice.

From the destroyer rendezvous out at sea, the convoy groups approached the ports of England or France by a bewildering, but systematic, net of approach routes. Leading into each principal port or passage were four or five different converging sets of approach lines. The western terminals of

these sets, about 200 miles offshore, were from thirty to forty miles apart from north to south. An approach line did not run directly from rendezvous to port: it broke sharply at a point *en route*, so that a submarine well out at sea could not communicate the true course of a group to another U-boat operating closer in.

On the first day of each month the Admiralty designated several groups of approach lines which were to be used during the following month. On September 1, for instance, it prescribed the approach groups for the month of October. Each group for the month was designated by an English letter, and each line in a group by a Greek letter. No group of approach lines was used for more than six or seven days, at the end of which time another group came into use automatically by the monthly schedule. If a U-boat chanced to discover an approach line in use, he could not successfully hunt along the line indefinitely, for in a few days the traffic along that line would automatically disappear.

At any time the British Admiralty might abruptly change the whole approach schedule by wireless notice to all its commodores and port convoy officers. For this purpose alone it used a special and highly secret code known as the diversion code. When the U-boats established a war zone on our side of the Atlantic, the American convoy office applied the British approach-route system to our own coastal waters and employed the admiralty diversion code whenever we needed to change our approach lines hurriedly.

After the U-boats appeared on this side of the Atlantic, it became necessary for us to look to our coastwise routes as well as to our port approach lines. It was evident that we should have to do as Europe was already doing—protect our Atlantic coastwise shipping by routing it, rather than by providing armed escort for it. There were no destroyers to spare for the latter method. The Atlantic coastwise traffic was of two sorts—the normal north-and-south commerce, consisting of the New England coal trade and the like, and the special traffic, consisting of overseas ships loaded at the outports and

on their way to join the convoys from Newport News, New York, or Halifax.

The Navy established its coastwise routing office on June 3, 1918, although for several months before that date navy officers had been studying our coastwise channels with a view to prescribing routes for ships in the event that the U-boats attempted to blockade us. In March a board of these officers reported a plan of action. It placed the control of coastwise shipping in the hands of the commandants of our various Atlantic naval districts.

The Atlantic coast—particularly the southern part of it—is peculiarly adapted to safe routing. The sandy shore slopes gradually down to the depths. For many miles out, the ocean, though comparatively shallow, is deep enough to float ordinary vessels, yet not so deep that submarines can maneuver under the surface. By routing ships close in, the system might be expected to force the U-boats to attack on the surface, where they could be seen and combated, both by the merchant vessels themselves and by the coastal patrol craft. A disadvantage of this scheme was that it tended to create dangerous congestion in the inshore channels. To obviate this, the Navy established different coastwise lanes for northbound and southbound traffic.

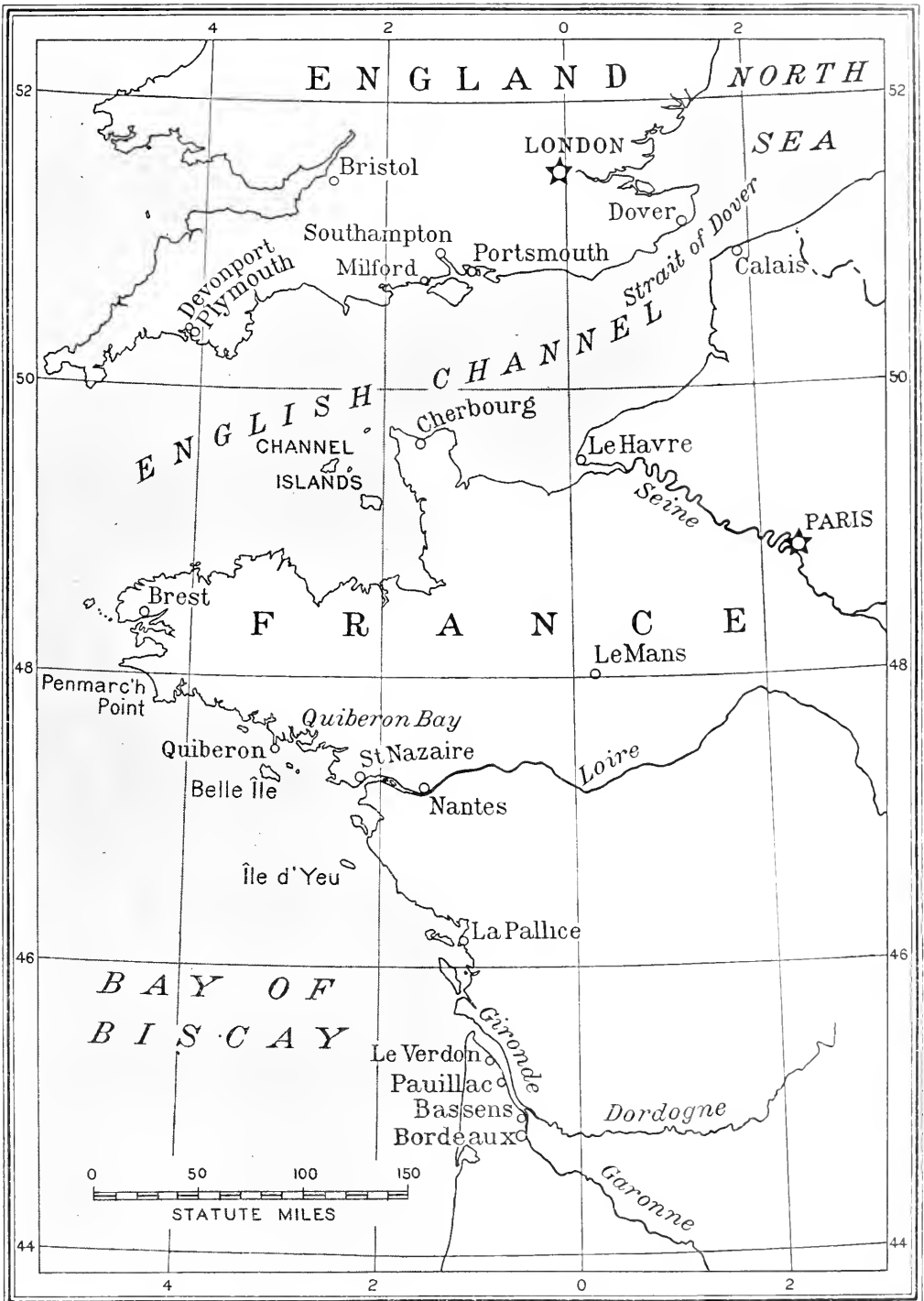
Many of the smaller coastwise ships were not equipped with radio. Some way had to be devised of communicating with them as they passed along the coast. For this purpose the Navy established speaking stations at intervals. These stations, which were on lighthouses, in lightships, on promontories visible from a great distance, and on shores where the routes came close in, were manned by navy personnel and equipped with large flags and colored lights for visible signaling, both by day and by night. Coastwise ships were required to speak all stations along their routes. On the Florida coast the Navy established two reporting stations, one on Sand Key and the other at Jupiter Inlet. All ships going in or out of the Gulf of Mexico were required to signal their identity to these reporting stations, outbound vessels speaking Sand

Key and inbound speaking Jupiter. Thus the routing office knew when coastwise ships had passed safely out of the dangerous zone and when others were coming into it.

The navy routing office established local branches in the principal Atlantic and Caribbean ports, and all vessels moving up and down the coast reported to the local port officers, who passed them on, guarded by such escort vessels as were available. The principal branch routing office was at Norfolk. This branch, with its sub-branches at Newport News and Baltimore, gave coastwise routing instructions in all to 4,072 vessels. Not one ship that followed these instructions was lost on account of enemy activity. After the armistice we discovered that the secret coastwise routes in the Norfolk district had at all times been almost entirely free of mines planted by hostile submarines. The Norfolk routing officer turned his quarters into a sort of club for coastwise captains. They made free of the place, which became a veritable clearing house for the wisdom of the sea. Though the navy routing office was established primarily for the benefit of the N. O. T. S. ships, the Shipping Board and the Embarkation Service of the Army made full use of it, dispatching all their coastwise vessels on routes prescribed by the Navy. The British port routing officers, too, accepted the navy routes in sending British and other Allied vessels up and down the coast to join American or Canadian cargo convoys.

After the convoy groups reached the shores of France and England, the ships were distributed in such fashion that no vessel had to double back through dangerous waters in touching at necessary ports. The system eliminated all waste motion at sea. A vessel which was to discharge cargo at several ports went first to the port farthest away from the point where the outbound convoy would assemble, and moved toward the assembling point as she put off her load.

The principal French ports of discharge for our American cargo transports were on the Gironde and Loire rivers. On the Gironde were Pauillac, twenty-five miles from the river's mouth, Bassens, forty-five miles up the river, and



Drawn by Albert Hoyt Bumstead

THE FRENCH COAST
 Showing American Ports of Debarkation

Bordeaux, fifty-two miles from the ocean. On the Loire our ports of discharge were St. Nazaire and Nantes. We also sent a few army cargo vessels to discharge at Havre, La Pallice, Cherbourg, Brest, and Marseilles, on the Mediterranean.

The entrance to the Gironde River is a narrow channel leading through a sandy delta to Le Verdun Roads, fourteen miles upstream. At Le Verdun the channel widens, forming a basin in which vessels can anchor while awaiting berths. Above this point the river is so full of sandbars and the channel so narrow that there is no turning room. A swell often runs at Le Verdun Roads, so heavy as to prevent the handling of cargoes at that point. At Pauillac the tide runs from six to eight miles an hour, and the river above Pauillac is so narrow that it must be managed as if it were a single-track railroad. There are only two points above Pauillac where large vessels can pass each other. At Bordeaux there is a sixteen-foot tide. The tide in the Loire is also heavy; it rises and falls thirteen feet, and the swift current prevents the handling of cargoes on lighters. These adverse natural conditions embarrassed the development of our military port facilities in France.

Our cargo ships in France assembled for the return convoys at Le Verdun on the Gironde, at Quiberon Bay northeast of the mouth of the Loire, and at Brest, the northwesternmost port of France. Ships in the British Isles assembled for westbound convoying at Buncrana and Queenstown in Ireland, and Plymouth, Liverpool, Davenport, Milford, and Lamlash in England.

The westbound convoy groups which sailed from these ports were usually much larger than those which moved eastward. They kept together as escorted and protected groups until they had passed through the most dangerous part of the submarine zone, and then they dispersed, each vessel steaming on individually at top speed to its destination over a route prescribed in advance by the Admiralty. A ship that was unarmed usually steamed in company with some armed ship. The limitation in the number of suitable escort vessels

made it impracticable to operate cargo ships westward across the Atlantic in group formation. It was important, however, that all westbound ships be definitely routed across the ocean, so that they would not run into any eastbound convoys. On the average a ship could return to the United States in three days less than it took her to go from the United States to Europe in convoy. The average voyage of a freight vessel from America to France in a convoy was 17.9 days: the average return voyage, with the ship sailing independently, lasted 14.8 days.

In July, 1918, when it was disclosed that the Germans were about to begin operating six submarine cruisers, each with two six-inch guns and a speed of eighteen knots an hour on the surface, the British Admiralty proposed to apply the convoy system completely to the westbound transatlantic traffic. The French Government agreed to the proposal, but America objected on the ground that there were not enough escort ships to convoy both east and west without holding groups in port for impracticably long periods.

The master of an American cargo ship was not supposed to rest in the security given to his vessel by the escort and the routing of the convoy system. He possessed in his ship inherent possibilities of defense which, under the scientific direction of the Navy, he was expected to employ to the utmost of his ability, both to prevent an attack and to withstand one if it came. These defenses were of two sorts—material (guns, smoke boxes, and other apparatus) and tactical (that is, the evolutions he could perform as a navigator to save his ship).

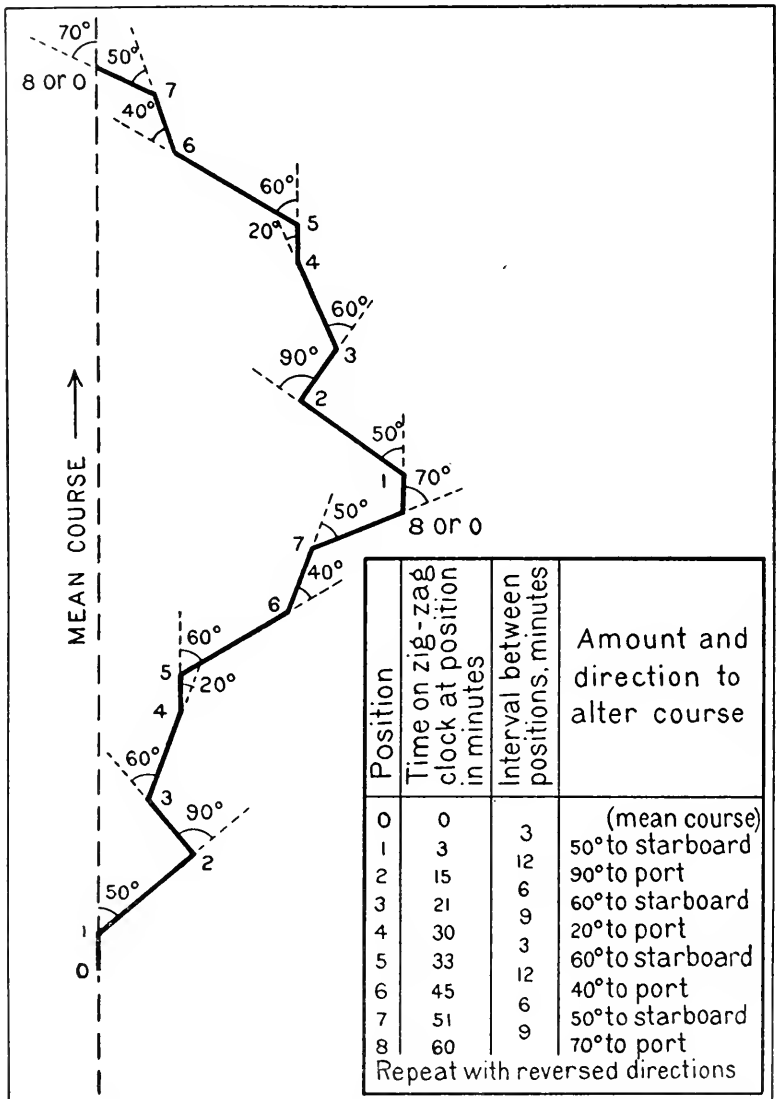
Of the guns and their crews we shall speak later. The smoke boxes were filled with phosphorus compounds which, when ignited, threw off clouds of white, gray, or yellow vapor. There were two kinds—those which burned on the deck of a ship and those which were thrown overboard (usually in sets of three) and floated, forming the source of a stationary bank of smoke. The weakness of smoke boxes as a defense was that they could not screen vessels in strong winds.

The tactics of the safe operation of a vessel in the known or suspected presence of a submarine were embodied in 200 rules set down in the lead-bound volume entitled *War Instructions for United States Merchant Vessels*. In a joint preface to this document, the secretaries of the Navy and of Commerce called attention to the fact that any vessel master who disregarded the instructions would, in the event of disaster, "be considered not to have handled his ship with sufficient skill to have preserved her safety with that of the people on board and the cargo, and proceedings will be instituted through the prescribed authorities"—a plain notice that he would lose his ticket. The 200 rules were, in the main, amplifications of the four cardinal principles of safe navigation in submarine areas: (1) zigzagging; (2) silence and darkness on board; (3) alert lookouts; and (4) water-tight integrity. The *War Instructions* also showed silhouettes of the principal types of German submarines, so that mariners could identify them from a distance; told how to avoid mines and how to identify aircraft at sea; and also embodied the essential convoy rules.

A considerable section of the volume was devoted to zigzagging. There were plates which gave full sailing directions for thirty-three standard zigzags. These were numbered, so that a group flagship could throw the whole formation into any zigzag by signaling a number. The zigzags varied according to whether they were to be used in relatively safe waters, in the submarine areas, or in especially dangerous waters; they differed also for slow, medium, and fast ships. Certain zigzags were for ships in convoy and others for vessels sailing alone. As a rule, the shorter the zigzag legs and the more abrupt the turns, the more protective they were. Such zigzags were not used except in extremely dangerous places, because the mean distance gained by such a course was not great. In relatively safe waters, the legs were long and the turns slight. Such a zigzag was designed only to deceive a submarine taking observations at a considerable distance.

A zigzag was usually made up of seven legs and turns. Each turning point was called a position, and the positions

were numbered serially. This series began with Position 0 and ended with Position 7; Position 8 would be simply Position 0 of the next repetition. On the first repetition the turns were usually made with reversed directions; the second repetition



Zigzag Course for Use in Dangerous Waters.

reverted to the original formula; and so on, alternating. The usual zigzag was run off in exactly an hour. The legs were reckoned in time rather than in distance, the mileage depending upon the speed of the ship.

This explanation can be made clear by an examination of a standard zigzag, a diagram of which is reproduced herewith. This is a violent zigzag—one to be used by an individual ship in especially dangerous waters, or actually in the presence of an attacking submarine. The start is at Position 0 on the base course. Three minutes' run takes the vessel to Position 1. The distance made by a ten-knot ship on this first leg would be a half mile; by a twelve-knot ship, six-tenths of a mile; by an eight-knot ship, four-tenths of a mile, and so on.

Position 1.—Turn 50 degrees to starboard; run 12 minutes; distance made by a 10-knot ship, two miles.

Position 2.—Turn 90 degrees to port; run 6 minutes; distance made by a 10-knot ship, one mile.

Position 3.—Turn 60 degrees to starboard; run 9 minutes; distance, one mile and a half.

Position 4.—Turn 20 degrees to port; run 3 minutes; distance, four-tenths of a mile.

Position 5.—Turn 60 degrees to starboard; run 12 minutes; distance, two miles.

Position 6.—Turn 40 degrees to port; run 6 minutes; distance, one mile.

Position 7.—Turn 50 degrees to starboard; run 9 minutes; distance, one mile and a half.

Position 8 or 0.—Turn 70 degrees to port.

Distance made good on mean course by 10-knot vessel, 6.9 miles.

This evolution consumed exactly one hour. At the expiration of that time the vessel found herself sailing on a course parallel to the mean course, but five or six miles off to the right of it. She then repeated the zigzag, this time reversing the turn at each position, so that the turn at Position 8 of

the repetition (70 degrees to starboard instead of to port this time) put her again on her mean course. If desired, the next repetition could be taken off to the port side of the mean course line, with a third repetition with reversed turns to bring the ship back again to the mean course.

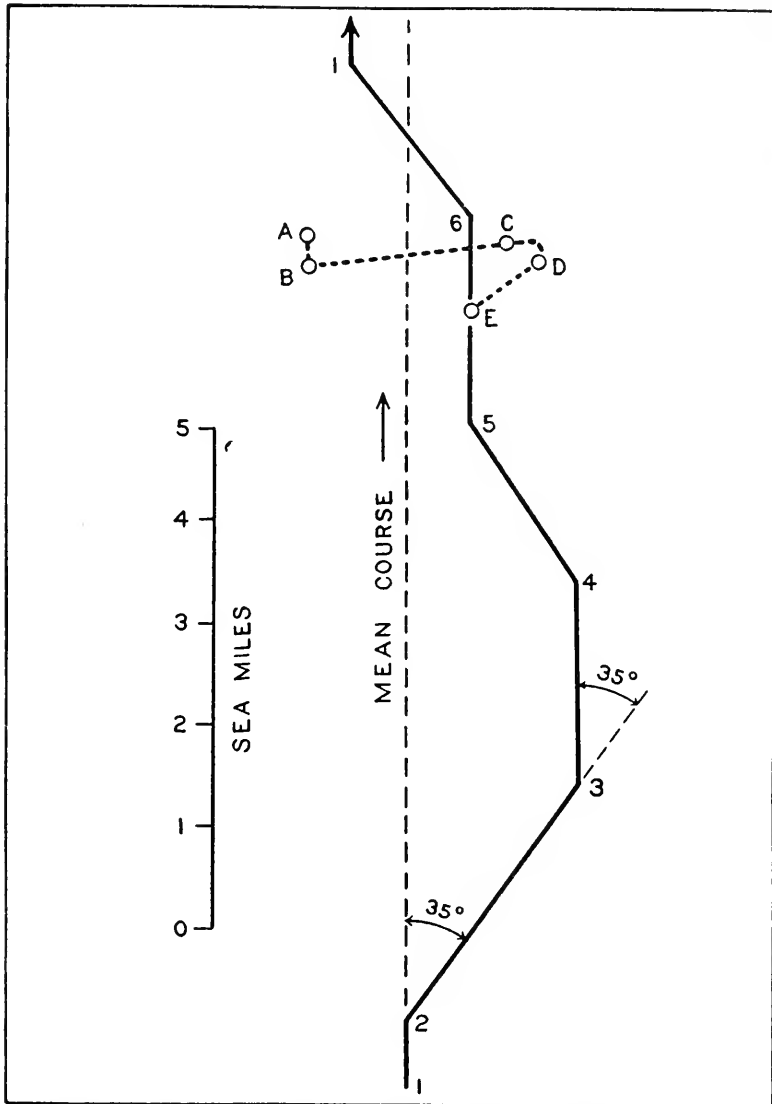
Ships in convoy steamed in column. If a zigzag were signaled, the column did not weave in and out, like schoolboys playing a game of follow-your-leader; rather, every ship in the column made each turn simultaneously with the others, apparently throwing the column out of formation and putting its ships on parallel courses. This apparent lack of column formation continued until the turn at Position 8 formed the column once more.

Every American ship that ran in the convoys was equipped with a zigzag clock, a chronometer with electrical contact pins set around the dial so that the minute hand would touch them in passing and close an electric circuit that rang a small bell. The master of a ship could set his clock for any desired zigzag by screwing in the pins at their proper minute holes. The clocks of a group were synchronized so that all the turning bells would ring on the second, notifying the helmsmen simultaneously to make the turn.

The convoy system, by providing warship escort for cargo boats, drove the submarine under water and compelled it to attack with its precious torpedoes instead of with gunfire, which its commander preferred. Zigzagging, therefore, as an element of convoying, undoubtedly saved many a ship. More than one vessel saw a torpedo go by bow or stern just after she had made a zigzag turn—a clear indication that the missile had been aimed at her on the assumption that she was sailing a straight course. Zigzagging was even more valuable for another reason. Compelled to stay under the surface, the U-boat commander could make observations only through his periscope, which he dared raise only for brief periods. His hasty observation might be made when a group was on a zigzag leg. He would at once set forth under water to intercept the group, but when he made his next observation he

might find that the ships had made a turn in the meantime that had carried them well past the danger of attack.

To convince vessel masters of the value of zigzagging, the *War Instructions* included several plates in illustration of



Probable Movement of a Submarine Approaching a Zigzagging Vessel.

the probable action of a submerged U-boat attempting to attack a zigzagging ship on the basis of occasional observations. One of these diagrams is reproduced herewith.

When the U-boat commander sights the vessel, at her Position 1, nine miles away, she is coming toward him, almost bows on. He dives and proceeds slowly in her direction until he reaches B, when he makes another observation. Meanwhile the ship, a twelve-knot vessel, has reached her zigzag Position 2, and has turned thirty-five degrees to starboard. The enemy dives once more and makes off at full speed ninety degrees to port to intercept the vessel. At C he makes another observation. By this time the ship has passed Position 3, where she turned thirty-five degrees to port. The U-boat is now almost on the course of the ship and in an excellent position. The commander slows down and turns toward the vessel, now less than five miles away from him. Again at D he elevates his periscope, only to find that the ship has zigzagged thirty-five degrees to port and is now steaming on such a course that it will require the U-boat's best underwater speed to head her off. The enemy turns to starboard almost at right angles and proceeds to E, where he makes his final observation. To his surprise, he finds that the ship is now within a mile of him and is heading directly for him, for the vessel has zigzagged at her Position 5. The worst possible position for the U-boat is dead ahead of a ship, broadside on, and close. The ship's hull presents only a narrow mark, and the submarine itself is in danger of being rammed or sunk by gunfire before it can turn to aim its torpedoes. It is probable that a U-boat commander, finding himself in this position, would dive and give up the attack.

Few cargo convoys ever crossed the ocean without losing some of their ships out of formation and failing to pick them up again. Storms at sea, breakdowns, and various troubles prevented all vessels from maintaining a steady rate of travel. Once a boat was out of convoy and unable to rejoin its group, it was forced to proceed alone. The serious sinkings of the last few months of the war were principally among such

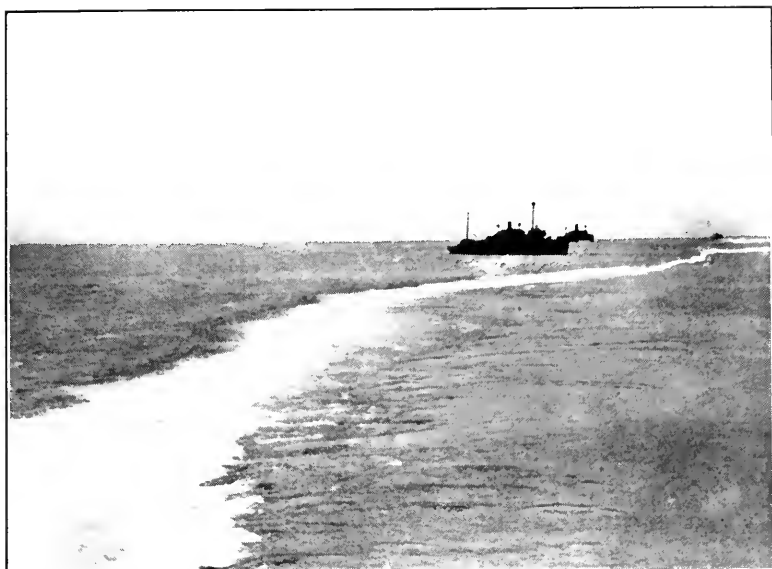


Photo by Underwood & Underwood, N. Y.

WAKE OF ZIGZAGGING VESSEL IN CONVOY

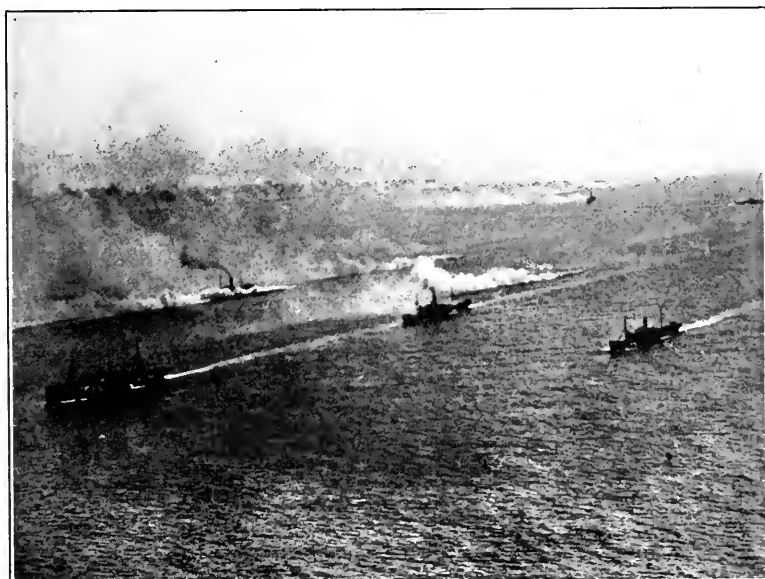


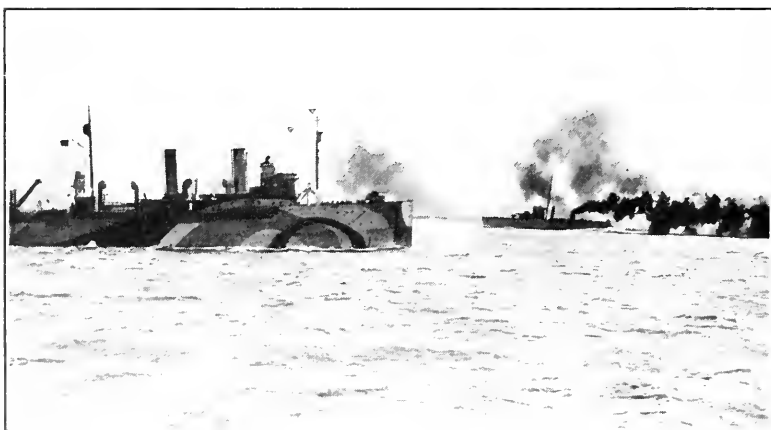
Photo by Western Newspaper Union

**CONVOY ATTACKED. VESSELS DROPPING SMOKE BOXES;
DESTROYERS IN BACKGROUND LAYING DOWN
SMOKE SCREEN**



Photo by Commander Haines, U. S. N.

**DESTROYERS INTERPOSING SMOKE SCREEN BETWEEN
TRANSPORTS AND HOSTILE SUBMARINE**



U. S. Navy Official Photo

**DESTROYER CIRCLING CONVOY TO ATTACK U-BOAT.
LEADING TRANSPORT (ON LEFT) FLYING
SUBMARINE-WARNING FLAG**

estrays. The commodore of the cargo convoy that left Newport News on January 26, 1918, reported that, of thirty-seven ships which started out in the group, only twenty-two were present when the formation split up in the English Channel. This voyage was made, however, under exceptionally severe weather conditions.

Though the convoy system, as figures show, actually reduced the carrying efficiency of the transatlantic tonnage twenty-two per cent, as compared with the performance of the same tonnage before convoying was adopted, it was extraordinarily successful in protecting the vessels. In the first part of 1918 an average of 1,356 vessels sailed monthly in overseas convoys into or out of British ports. Upon these ships there was an average of twelve U-boat attacks a month, with an average monthly loss of only six ships. The average loss of all vessels in convoy was four-tenths of one per cent of the tonnage convoyed. Between May, 1917, and November 12, 1918, a total of 6,061 vessels sailed in mercantile convoys from the United States and Canada to Europe. The heaviest month was October, 1918, when 511 ships left this coast. On October 31, 1918, independent sailings were largely resumed. On that date the Admiralty knew for a certainty that the German submarines had all been recalled and were returning to their bases. The last cargo ship which sailed in convoy left New York on November 12.

With the main points of cargo convoying in mind, the reader can understand the policy which was so successful in saving our eastbound troop convoys from attack. The fact was that the U-boats not only seldom attempted to sink a loaded American troopship, but seldom even saw one. Not that the Germans did not wish to stop our troopships. They missed no opportunity to torpedo them when they got a chance. After the British liner *Justicia* had been sunk, the German press announced with great satisfaction that the U-boats had sunk the *Leviathan* loaded with American soldiers.

Arguing from superficial considerations, one might assume that a troopship at sea must have been a particularly hazardous risk. The troop transport is a distinctive object, with its two or more funnels, its superstructure of several decks, and its heavy bow wave. It is not at all like a cargo boat in appearance. The troopships did not escape because the enemy failed to distinguish them from cargo vessels, nor because of any other accident. Their immunity from attack was due to a number of governmental policies applied in combination.

In the first place, we permitted no American vessel to carry troops unless it could maintain a speed of at least twelve knots an hour. Some of our troopships could run as fast as twenty-four knots an hour. High speed in itself did not give a transport complete immunity from attack, but it was a tremendous factor in her safety. Only by accident would a U-boat get into a position favorable to a successful attack on a fast ship. The submarine would have to come up by chance and find itself almost in the direct course of such a vessel. If the enemy were off the course at any distance, he could not by any possibility gain a strategic position, for his maximum submerged speed was only eight knots an hour.

Assuming, however, that the U-boat commander found himself in an absolutely perfect position for an attack on a fast ship, he would still be unlikely to score a hit. If he were firing at such a vessel as the *Leviathan*, for instance, he would have to launch his torpedo far ahead of her—much farther ahead than he would have to aim it to hit a slower ship. The torpedo wake is unmistakable to anyone who has ever seen it. It can be observed at a considerable distance. In daylight—at night, too, if it be dark and the water phosphorescent—the lookout on a fast ship will see the wake in plenty of time for the ship to steer clear of the torpedo.

Another element in favor of the troopships was that the average warcraft escort thrown about them was three times as formidable as the escort given to a cargo convoy, and often ten times as strong. The U-boat commanders knew this and appreciated the hazard. Consequently, only the more

intrepid submarine commanders and crews cared to attack troop convoys.

The risk for the U-boat was perhaps greater at night than by day. A submarine cannot attack submerged at night, for in darkness its periscope is useless. It must attack from the surface; yet on the surface it is easy prey for such a vessel as a destroyer. An observer on the deck of a submarine, even if aided by the best glasses, could not see a troopship more than a mile away on a dark night. The discipline on our troop transports was such that none of them ever showed the least glimmer of light at night. Because it was safer for our troopships to run in the dark than in daylight, the convoy routes were so charted that the troop convoys were invariably taken through the more dangerous section of the war zone at night.

There was still another factor making for the safety of our soldiers at sea. We have seen how the British Admiralty kept track day by day of the positions of submarines at sea. There were never many U-boats at work at once. Germany had two hundred or more of them in commission, but even when they were operating most effectively there were never more than twenty-five in the Atlantic during the course of any one month. The positions of all submarines at sea were spotted on the map once every twenty-four hours. When the Admiralty observed certain concentrations of the U-boats evidently watching for an approaching American troop convoy, it sent forth orders in the diversion code, so changing the route as to bring the troopships in between the hostile concentrations.

But the most powerful protection of all lay in the scheme of convoying itself—in the general convoy routing plan. Cargo groups and troop groups were never routed on the same lanes; at all times the cargo lanes in use were distinct and far removed from the special lanes given over to the troop convoys. On the cargo lanes the groups might come along every day or two in the near approaches to the European coast, but the troop lanes would be deserted for days at a time. If a U-boat commander hunted for troopships, he might

go for weeks, not only without even seeing a troop convoy, but without seeing merchant ships of any sort. If he discovered a troop lane and stayed on it, he could not by any chance see the cargo ships, for their lanes were far away. It followed that, if he wished to gain fame at home and secure the honors that went with successful operation at sea, he must rely practically altogether upon sinking cargo ships. Cargo convoys were on cargo lanes, and troop convoys were on troop lanes, and never the twain did meet. The U-boat commander had his choice of which sort of vessels he would hunt, but he could not hunt both; it was one or the other. To go after troopships meant that he might be forced to return to his home base weeks later with nothing at all to show for his voyage. Moreover, if by great good luck he encountered a group of troopships, the chances that he himself would be destroyed were greater than that he would sink a transport.

Thus the convoy system forced the U-boat to concentrate upon the cargo convoys. The cargo vessels comprised eighty-five per cent of the total traffic in the Atlantic. Only in the cargo lanes could the submarine commanders build up their reputations. If an enemy took up a position in a troop lane, he might be there for weeks and never see a ship, for the lane was sixty miles wide, and the group might pass him at night unseen. If he met a convoy, he found a relatively small number of vessels, all of high speed, all difficult to attack successfully, and all surrounded by a powerful guard of deadly destroyers.

The success of the system in protecting the American troops at sea created such disappointment in Germany that, in the summer of 1918, popular opinion there overthrew the political administration of the German Admiralty. At that time America and the Allies no longer tried to conceal the success of our overseas troop movement. Public, authorized statements called attention to the tremendous transportation of American troops, a military movement greater than the world had ever before seen and greater than anyone had believed to be possible, even over a safe ocean. The reaction in Ger-

many was the overthrow of von Capelle, Secretary of the German Navy, in August, 1918, and the adoption of a policy to make a demonstration against the American troop transports, even if it meant allowing the cargo fleets to go through unscathed. Admiral von Mann, who was a critic of the German Admiralty, was named as von Capelle's successor. There is no question that he attempted to put the new policy into effect. The Admiralty in London discovered concentrations of U-boats in new cruising areas where they had not been seen before. It was obvious that all were hunting for our troopships. If we need visible evidence that the Germans neglected the cargo convoys in their determination to sink American troopships, we can read it in the figures of submarine sinkings during the summer and early fall of 1918:

Sinkings during July . . .	260,000 gross tons
Sinkings during August . . .	271,000 gross tons
Sinkings during September . . .	180,000 gross tons
Sinkings during October . . .	112,000 gross tons

Admiral von Mann put his policy into effect about September 1. In August 271,000 gross tons of shipping, practically all cargo vessels, had been sunk. In September the sinkings fell off nearly 100,000 tons. In October the sinkings were less than half what they had been in August, as a now desperate enemy neglected the freight ships almost altogether in his determination to destroy our troop transports. Nevertheless, the convoy system checkmated him completely. For all his effort the enemy was able to show not the slightest success.

CHAPTER XXXII

MARINE CAMOUFLAGE

IN the contest with the submarine we employed one defensive measure which was more conspicuous, perhaps, than it was effective, but in which there always seemed to lie great possibilities. To marine camouflage, as the protective coloration of vessels was called, some of the most eminent artists and physicists of the world devoted an immense amount of study, and in a few months created virtually a new branch of science. The development was crowded with exploits of the most ingenious and admirable sort. Not the least remarkable aspect of the affair was that marine camouflage was born under one theory, progressed under it for a time, then abandoned it entirely, turned about, and headed in quite the opposite direction, where, it proved, the truth lay.

Ship camouflage was not a new subject with our Navy when we entered the World War, or even when the war broke out in 1914. Since 1898 the Navy had been studying it, although it was not until 1915 or 1916 that the word "camouflage," from the patter of Parisian studios, took its place in the Esperanto of war terms. Until then we knew it as protective coloration—a phrase borrowed from the naturalists who had studied the tricks of camouflage devised by Mother Nature. By 1908 the Navy had acquired an extensive file of correspondence and memoranda relating to the concealment of ships at sea by exterior painting. Since 1899 our battleships had been painted gray, on the theory that in such dress they were indistinct against the horizon or even, in misty weather, invisible.

As soon as war broke out in Europe, all the maritime

nations began thinking about this subject anew, and America was not backward in this respect; for on October 30, 1914, when the World War was only three months old and America as yet felt secure, an architect in the Bureau of Construction, U. S. N., submitted a memorandum containing some fresh ideas on the protective coloration of ships. By the spring of 1917 most of the Allied countries had begun painting their merchant vessels to conceal them from the enemy at sea, although the science was then still in its early infancy. In fact, America started out in this friendly competition of ingenuity on an equal footing with the other nations at war with the Central Powers.

The Government from the start recognized officially the value of camouflage. The United States Shipping Board in 1917 selected and approved several systems of protective coloration proposed by various American artists. The new Bureau of War Risk Insurance made a reduction in the rates of marine insurance upon vessels painted according to the canons of five designated camouflage systems. American merchant ships thereupon began carrying their outlandish decorative patterns to sea, there to be watched carefully and reported upon by observers. The reports were both favorable and unfavorable, in about equal proportions.

The underlying principle of all early marine camouflage was to paint a boat to conceal it, as the feathers of a nesting sandpiper merge with the background of beach sand and pebbles and make the bird practically invisible. The painters attempted to decrease the visibility of ships by matching them in color to the background of sea and sky. Artists could not agree, however, upon which background should predominate—the deep blue of the sea or the pale blue of the sky—nor could they circumvent the fact that, in the southern or subtropical end of the war zone, the colors of the seascape are rich and strong, whereas in the high latitudes they are cold and gray. A ship could not be painted for both environments. Moreover, the unalterable fact remained that a fast ship—the sort of ship most worth protection—runs with a distinguishable bow wave,

the so-called "bone in her teeth," which in ordinary weather unmistakably betrays her position, no matter how cleverly she may be painted for concealment.

The pioneers in marine camouflage made the early mistake of observing their subjects at sea from the decks of other ships—in other words, from points as high as thirty or forty feet above the water—whereas the tallest of the enemy periscopes cleared the surface by only six or eight feet, and often a hostile observation was made from a point barely above the surface. The most ardent exponents of concealment painting admitted that if a ship were silhouetted against the sun or a glowing horizon it would appear sharply black, regardless of its paint. It was soon evident that to the man at the periscope the outlines of every vessel at sea appeared in silhouette.

After less than a year of trial, the protective system of coloration was abandoned altogether, and the ship painters began to bedaub the vessels, not to conceal them, but to do just the opposite—to make them highly conspicuous. The patterns, however, were designed to throw out optical illusions. The profile of a vessel might, to the eye of a U-boat commander, be silhouetted; still he had to make close, though hurried, observations upon conspicuous features of the hull and superstructure, in order to gauge the ship's size and bearing. The new painting attempted to deceive him in these particulars. The distortion system became known as "dazzle" camouflage. In its results it was effective. The statistics show beyond doubt that many vessels were saved from destruction by their dazzle coats.

The hand of the marine builder also aided in the processes of concealment and distortion. At the shipyards such changes were made as shortening the funnels of steamships so that they could not be seen at great distances, cutting down the masts, or stepping only a single mast, and that placed exactly amidships, without any rake to betray the direction in which the ship was traveling. Dozens of other constructional schemes were either tried experimentally or put into general practice. The standard Hog Island freight boats were built with stem



Photo by Signal Corps

LAYING OUT CAMOUFLAGE DESIGN



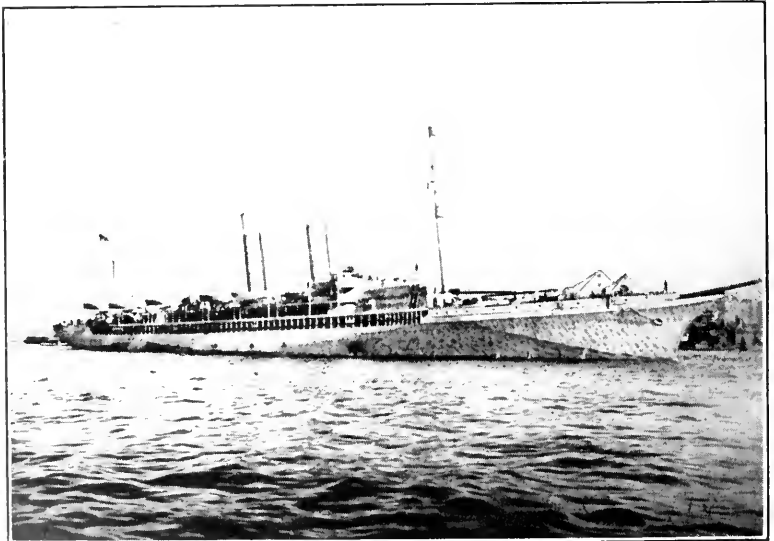
From The War College Collection

U. S. TROOPSHIP *SIBONEY* CAMOUFLAGED WITH DAZZLE DESIGN



Photo from Bureau of Construction and Repair, U. S. N.

**TOTTORI MARU, ARMY CARGO TRANSPORT, IN
CAMOUFLAGE WHICH SAVED HER.
SEE PAGE 511**



From The War College Collection

**AMERICAN LINER PHILADELPHIA CAMOUFLAGED
BY MACKAY SYSTEM**

and stern practically alike in appearance, and with two low unranked masts equidistant from bow and stern. Other designers placed the masts in distorted fashion off the center of the ship, one to port of the keel and the other to starboard, so that a U-boat commander who lined up the masts to estimate the ship's course would get a false impression.

The pioneer American exponent of marine camouflage was probably Mr. George de Forest Brush, an artist of New York. The first communication in the navy camouflage file, dated June 3, 1899, was signed by Mr. Brush. It was the beginning of a considerable correspondence on the subject of concealing ships by the use of pigment and color. The artist's son, Mr. Jerome Brush, shared his father's interest in the subject; and after the declaration of war in 1917, the two were ready to put their theories into practice. Mr. Abbott H. Thayer, the New England artist and naturalist, had made extensive studies of the law of protective coloration in nature; he ranked, in fact, as the discoverer of that law. He was the author of an authoritative work entitled *Concealing Coloration in the Animal Kingdom*. In the late eighteen-nineties Mr. Thayer had worked out a system of concealing inanimate objects by a plan known as quarter shading. In 1917 Mr. Thayer and Mr. Jerome Brush jointly held a patent securing to themselves the rights of using this method of disguise.

In theory, quarter shading apparently turns a cubical object into an object of only two dimensions. Surfaces that normally show as high lights are painted in dark shades. Depressed surfaces and surfaces normally in shadow are brought out by painting them in light shades, or even in white. This scheme diminishes the appearance of solidity in an object and brings it out to a flat, even surface.

Messrs. Brush and Thayer painted numerous American ships by the quarter-shading process, among them the American liner *St. Paul* and the navy collier *Jupiter*. On the *St. Paul* all horizontal surfaces that caught the full light of the sun were painted black. To the degree that surfaces varied from horizontal, they were in lighter shades—grays—until, on sur-

faces seventy-five degrees or more from the horizontal, dead white was reached. The owners of the *St. Paul*, however, would not permit the decks to be painted in dark colors, a refusal which largely vitiated the plan. Observations of the *St. Paul* at sea showed that the quarter shading did not reduce the sharpness of the vessel's silhouette against the sun; but that objection, as it proved, could be asserted against any concealment system. With the sun behind the observer, the Brush-Thayer scheme of quarter shading had indubitable effectiveness. For example, on one occasion a destroyer five miles away from the collier *Jupiter* could not distinguish her, although the destroyer was herself plainly visible from the coal ship.

In the spring of 1917 Mr. William Andrew Mackey, a New York artist, brought to Washington a little machine for spinning various colored discs. At an interested meeting of the Navy Consulting Board he placed on this machine a disc, the sectors of which were colored successively red, violet, and green in fixed proportions. He spun the disc, and it thereupon blurred into a gray as nearly identical with that of a sea horizon as human vision could register. Then, placing on the machine a disc of alternately green and violet sectors, properly proportioned, he spun it, and the result was the blue of sea water. Then he expounded his theory.

He opposed paint designs which brought in white or gray, on the ground that these colors do not actually appear in nature in the traveled latitudes of the Atlantic; they appear only *in effect*. He ruled out battleship gray on the ground that it gives off a reflected color, and is not an original source of color waves. The horizon background behind it, on the other hand, is kinetic in its effect upon the optic nerve; and therefore the gray ship, even if its paint reproduce the horizon color exactly, will always appear distinct against the horizon. He analyzed the horizon light itself into its primary colors and proposed to mingle those colors in a painted pattern the component colors of which would merge in the distance and become themselves a kinetic source of radiation of the desired shade. He declared that a ship so painted—painted with pigment light, as it

were—would tend to merge completely into the marine background.

The Mackey system was applied to many ships. It was the forerunner of numerous similar systems devised by artists who were studying the spectrum composition of light and applying their theories in various stripe and stipple patterns. One of these men was Mr. Louis Herzog, an artist of New York, whose system combined quarter shading and primary colors. Dr. Maximilian Toch, an artist and paint manufacturer of New York, devised another invisibility system based on studies of the spectrum.

As the Mackey system developed, it came to consist mainly of block patterns of primary colors. The color blocks possessed sharp outlines and were arranged in cubist fashion on what the artist called the rupture principle. He usually divided a vessel into large masses of contrasting color tones, in order to cause one or another of the large portions of the vessel to be invisible and to leave other parts visible, but showing a contour quite unlike that of a ship.

Mr. Mackey worked at the Norfolk Navy Yard, where painters under his direction experimentally camouflaged the yacht *Legonia II*, several fishing steamers, and a motor boat. One of the fishing boats, the *M. M. Davis*, was sent to sea on September 4, 1917, for observation. The reports made by practical mariners were, as usual, conflicting. One navy officer at Norfolk stated that, day in and day out, the *Davis* was more visible to him than ships painted the standard gray. On the other hand, the commander of the battleship *Ohio* observed the *Davis* and reported that her painting scheme was far superior to the gray of the warships.

About this time Mackey camouflage demonstrated its effectiveness in an unexpected way. One of the ships which the Mackey organization painted was the American liner *Philadelphia*. In October, 1917, while the *Philadelphia* was about 400 miles off the American coast proceeding to Europe, she sighted a mysterious freighter and, suspecting a submarine trap, ran up code flags demanding the vessel's identity. The

cargo ship did not reply, and the *Philadelphia* fired a shot across her bows. At once the freighter hoisted the Swedish flag, and her master apologized, saying that he had failed to observe the liner in her camouflage coat. On this same voyage an American destroyer lost the *Philadelphia* on a bright moonlight night and could not find her until dawn. In November one of our troop transports, the *President Grant*, observed a cargo ship at sea camouflaged by the Mackey system. The commander of the *Grant* reported afterwards that his lookout did not see the cargo ship at all until she was only a mile away, and then she looked like a moving bit of horizon in which the masts furnished the clue. The consensus of opinion was that Mackey ships merged with the background at relatively short distances. The Navy therefore ordered a number of government vessels painted accordingly.

Dr. Toch, with a plan based on spectrum analysis, aimed to provide for invisibility against a background of both water and sky. He painted ruptive designs of broad horizontal and oblique bands of basic colors. The stripes nearest the water were of darker hues, and the pattern toned off to the lighter shades at the top, the colors used being violet, dark olive, and pearl gray. Numerous reports attested to the effectiveness of this system. The Navy painted, among other vessels, the troop transports *Huron* and *Æolus* according to the Toch plan.

The dazzle system that was at length universally adopted originated in England. Yet we possessed in America an artist who had not only advised distortion painting from the outset, but had also applied his theory to several American vessels, which were therefore the first to carry dazzle designs to sea. This artist was Mr. Everett L. Warner of New York. On September 29, 1917, he brought to the Navy certain painted models which showed how he would break up a vessel's silhouette in order to make it hard for the enemy to get her range. This he did by using angular patches of whites and other colors in successive rows that overlapped each other and ran upwards from the water line at an angle of sixty degrees, covering hull,

structure, funnels, and masts, and bending around transverse surfaces, such as the ends of deck houses. The Navy adopted the system and ordered Mr. Warner to paint the ex-German ship *Ockenfels* as an experiment. The pattern which he applied made the ship's water line elusive. He cut down the funnels and masts and stretched a screen of canvas from bow to stern, the upper edge of the screen being on a level with the tops of the truncated masts. He also affixed to the stern of the vessel a boom with trailing cordage, to equalize the two ends in appearance.

Another system officially adopted was that devised by Mr. Watson, the master painter at the Norfolk Navy Yard. This system combined Toch and Mackey principles; it differed from them in that only dark colors were used, the designs aiming more at confusion and distortion than at invisibility.

The Brush-Thayer, Mackey, Herzog, Toch, Warner, and Watson systems were the six in most general use by America until well along in the spring of 1918. Meanwhile, numerous other plans had been advocated; and in order that an exact study of marine camouflage might be made, the Submarine Defense Association, an organization of American shipping interests, arranged with the Eastman Kodak Company of Rochester, New York, for the use of certain of its laboratories. There the association stationed physicists to conduct tests and work out standard rules for securing low visibility.

In their research, these scientists did not confine themselves to painting systems. They studied everything directly or indirectly relating to visibility at sea—average weather conditions at various parts of the war zone, tactics of U-boats, the structure of periscopes and the methods of obtaining the range in torpedo fire, distances at which objects at various heights are visible, smoke boxes, smoke prevention, and the like. Their report was the most exhaustive treatise which had appeared on the subject. It was not issued, however, until the Navy had adopted the British dazzle camouflage and had taken over the work of camouflaging all American vessels. Incidentally, the Navy gave officers' commissions to the heads of the Rochester

staff of investigation and put them in charge of its camouflage unit.

The report showed how important it was to reduce the smoke from a vessel's funnels, or to prevent it altogether. The average transport could not be seen through the tallest periscope at a distance of over fourteen miles. With a smoke plume above her stacks, the same vessel could be seen through the same periscope at thirty miles. One of the first acts of the War Risk Insurance Bureau was to refuse insurance to ships which did not carry on board enough anthracite or other smokeless fuel for two daylight periods in the war zone. At night, any fuel might be used. Unfortunately, vessels of other nations, not so restricted, usually traveled in the same convoys with American ships; so that, after all, a convoy voyage was frequently accompanied by a smoke cloud overhead.

Anthracite coal had the disadvantage that it did not fire up so quickly as bituminous. Mr. Charles A. Smith, an American, invented a fuel which was as hot as bituminous coal, but practically smokeless. This was known as "carbocoal." It was tested successfully in the locomotives of the Long Island and Pennsylvania railroads, and also by the Navy. The Government thought so much of the invention that the Shipping Board ordered the construction of two briquette plants, to have a joint daily capacity of 2,000 tons of the fuel. The Embarkation Service of the Army also adopted the patent fuel for the transports and took up a project to erect four plants with a combined daily capacity of nearly 5,000 tons.

The inventors also bent their energies toward smoke-prevention on ships. Two tankers of the Standard Oil Company tried out a device which jetted steam into the stacks and reduced the smoke plumes to light gray puffs, relatively invisible. The chief fault of the invention was that it forced the draft and consumed coal prodigally. Sir Alfred Yarrow, of England, invented a flue system that took the smoke from the stacks and delivered it through vents on the sides of the vessel at the water line. Cold water washed the carbon out of the smoke and cooled the remaining almost colorless gases so that they

would hang low. The British Government successfully installed this system on a few merchant ships. An American inventor designed a successful washing apparatus which fitted on the top of the funnel. It did away with the smoke, but the apparatus itself was so bulky that it could be seen for miles. Another plan was to inject a large amount of air into the stacks to dilute the smoke. Still another inventor proposed the electric precipitation of the carbon and dust particles in smoke, on the principle of the Cottrell precipitation process; but, among other disadvantages, this measure required the use of 60,000 volts of electricity, a pressure which was beyond safety limits at sea.

The Howden forced-draft system of careful firing gave almost smokeless combustion except for a brief interval after each charge of coal. The American Navy Consulting Board went thoroughly into automatic stoking, believing that it would be the ideal system, but its disadvantage was that in most firing rooms there was not enough space for automatic stokers. The Government officially approved no smoke-prevention devices.

The Rochester report concluded that if marine camouflage could cause a periscopic observation to err by fifteen degrees in estimating the direction in which a ship was traveling, or could cause the observer to overestimate or underestimate its speed by two knots, or could throw him out 200 to 300 yards in his estimate of the range, it would serve its end and considerably increase safety at sea.

While such investigations were going on, the amateur inventors were busy with plans to deceive the U-boats, and many an ingenious idea was presented for trial. On each of the light gray sides of the British warship H. M. S. *Suffolk* was painted, in darker gray, the silhouette of a smaller vessel, by which device it was hoped to deceive the enemy as to the actual size of the ship. One of the former German boats, the navy transport *Von Steuben*, appeared in a camouflage coat the principal feature of which was the painted silhouette of a destroyer. The theory was that a submarine at a distance would believe

that the transport was being escorted. This was a popular conception, and numerous ship owners adopted it. One inventor suggested that a piece of angle iron be riveted to the ship's side just at the water line, at the painted bow of the image, to give the effect of a bow wave cast up by the false vessel; and it was also suggested that smoke boxes be placed on the vessel's side to simulate smoke coming from the stacks of the silhouette.

Nearly all the inventors worked in the direction of concealment—a theory utterly discredited in practice before the war came to an end. Lieutenant Colonel Fairfax Ayres of the Virginia Coast Artillery, in July, 1917, proposed the idea of sheathing vessels in mirrors made of the newly invented unbreakable triplex glass. From a dozen other independent sources this same idea reached the Navy Department. Those who put forth the mirror plan would doubtless have been surprised to learn (what was true) that the American Navy, years before 1914, had experimented with mirrors at sea and had discovered by practical experiment that, instead of concealing the ship by reflecting water and sky, they more often drew attention by flashing light in all directions.

The cloth screen for breaking up the outline of a ship was popular with the inventors. No less a savant than Mr. Edison was intrigued by this notion. The Cunarder *Valeria* was turned over to Mr. Edison for experiment. Among other things that he did to the ship, he screened her upper works in canvas. The screen was blown off shortly after the ship left New York. The inventors, who were usually landsmen, appreciated neither the force of the Atlantic winds nor the psychology of the sailors, who scoffed at the screen contrivances and would not rig them up again if they blew down.

An inventor named Joseph A. Wood suggested the construction of sheet iron scenery to be placed about ships to make them resemble islands. A popular idea among inventors was to fit finely perforated pipes along the exterior of a hull and to force water into these pipes at a good pressure so as to form a moving cloud of mist that would continuously obscure the ship. From a Pacific coast studio came the idea of throwing on the

water at night motion pictures depicting non-existent ships, at which the U-boats might aim instead of at the transports.

Perhaps the most astonishing idea of all was that submitted by a good lady of York, Pennsylvania. Often at night when her room was illuminated, she had observed that she could not look out of the window, because when she attempted to do so the glass gave back to her only the reflection of her own face. So, with patriotic care, she indited a letter to Secretary Daniels to suggest that all ships be painted deep black; and not only the ships themselves, but every lifeboat on them, every spar, every raft, every surface that showed. All on board were to wear black clothing and black gloves; they were to blacken even their faces. Then, she wrote, "the periscope spy can see only his own face in the glass."

Another novel idea—and one that possessed more practical merit—was submitted almost simultaneously by A. C. Perry, Jr., and by George C. Evans, the latter a carpenter in the Navy Bureau of Construction and Repair. Nearly everybody has observed the advertising signs which change their appearance when a person passes, presenting one picture or wording as one approaches, another when one stands squarely in front, and a third from the opposite direction. The effect is produced by affixing parallel vertical fins, or strips, edgewise to a background. The first view is obtained when one sees the painting on, say, the left-hand surfaces of the strips. The second view is that of the background itself, and it is observed when one stands squarely in front and can see only the thin edges of the strips. The third view is that painted on the right-hand surfaces of the strips. The proposal was to give a ship three shifting suits of camouflage by this method. The camouflage experts of the Navy pronounced the scheme one that would treble the effectiveness of dazzle painting; but they rejected it on the ground that it was impracticable—too expensive, and too difficult for ordinary painters to manage.

It eventually became evident that all concealment plans were ineffective. Not one would conceal a boat when it was within torpedo range. The Germans had perfected their listen-

ing gear so that they could detect the presence of ships a great way off and could tell approximately the direction in which they were going. Therefore a U-boat commander, well aware that a ship was approaching him although her camouflage might still conceal her, knew that he needed only to wait, and presently she would come into view. The British were the first to throw concealment camouflage into the discard and to adopt deceptive painting, or dazzle, as a policy.

The British, too, were the first to adopt the test theatres which became so valuable to us later on in perfecting our camouflage designs. The test theatre was an enclosed box several feet in length and lighted from the top to approximate the lighting at sea. The observation point was the eye of a periscope placed at one end. On the floor of the theatre was a turntable which could be moved toward or away from the periscope, to give the effect of different ranges at sea. The back drop was painted to resemble the sky at the horizon. The platform on which the turntable rested was painted to look like the sea and was slightly curved upward at the back, to give the horizon effect at the level of the eye. Models of ships painted with camouflage patterns were placed on the turntable and observed at different angles and at different ranges.

The theatre gave a surprising illusion of marine conditions. The effect of the theatre models a few feet away from the periscope was almost identically the effect given by ships at sea miles away from submarine periscopes. In such a theatre the value of dazzle painting was discovered. One of the first dazzle models was placed on the turntable, and the commander of a British submarine was invited to make a quick observation and decide instantly what he would do if he were the commander of a U-boat and saw such a sight through a periscope at sea. He replied that he would dive immediately, because the model gave him the impression of a destroyer headed across his bows between him and a merchant ship.

In August, 1917, the British Navy published its conclusions on camouflage, and Admiral Sims at once ordered the American destroyers in British waters painted in dazzle patterns.

The British officer who stood in the position of discoverer of dazzle painting was Lieutenant Commander Norman Wilkinson, R. N. V. R., who proposed it to the Admiralty on April 27, 1917. In May or June of that year the British ordered H. M. S. *Industry* painted from one of Commander Wilkinson's designs and immediately afterwards put that officer in charge of an organization to paint fifty British merchant ships in dazzle designs as an experiment. The reports from these ships when they went to sea were so favorable that the Admiralty soon extended the plan to the whole British mercantile marine.

The first government to follow Great Britain in dazzle painting was France. Next the American Navy adopted it; and thereafter, in order, the Japanese, Italian, and Belgian governments asked the Admiralty to supply designs to them. The Admiralty stationed dazzle officers at the principal ports in the British Isles, and also at Gibraltar, Malta, and Port Said. The Admiralty issued a standard color book and a series of standard designs which were to be rigidly followed. No more painting from private designs was permitted. Deck cargoes had to be covered with tarpaulins painted in water colors. A dazzle design covered a vessel completely—hulls, sails, decks, and superstructures. To educate British owners and captains in the value of dazzle camouflage, observation theatres for models were set up at the principal British ports.

The Admiralty permitted a single design to be applied to as many as thirty ships, but to no more than that number. The camouflage office watched all designs at sea and compiled daily reports, tabulating and analyzing the figures of attacks, hits, and misses. If the record showed that a design was not effective, it was at once discontinued. Each design, therefore, was largely a matter of practical experiment. As the dazzle system continued in use and designs were improved, the number of torpedo hits decreased.

As a rule, the bows of vessels were painted in light colors and the after portions in dark ones. There were nine standard colors in the British system, each coming in a number of shades; the total number of shades was twenty-three. The

lighter tones of gray, green, and blue predominated. The distinctive feature of British camouflage was the extensive use of black.

While we in this country were still experimenting with low visibility, the Navy Department was receiving reports on the British dazzle ships. One of our destroyers, the *Squires*, reported in September, 1917, that she could not tell until she drew near whether the British merchant ship *Kanarky* was moving at all. In October, 1917, the commander of the *Froehlich*, after observing the British steamer *Astronomer*, reported: "This ship is about the best painted ship that I have seen. At a distance it is hard to tell just where she is heading, and besides she looks as if she were under water amidships." That same month the *McNeal*, observing two British ships at five miles' distance, reported that, even through a powerful glass, they appeared to be three small ships—tugs or destroyers—close together.

An American navy officer who went to Europe in 1917 with the House Mission studied the British dazzle plans and, upon his return in early 1918, brought with him the data on which we could establish a dazzle camouflage system of our own. The Navy looked over these plans and adopted the system—not, however, at first discarding the concealment theories, and intending rather to continue its investigation of them. The dazzle system had the advantage of being a complete and formulated thing; to put it into effect required only an organization. Primarily for this reason, the Navy came to an agreement with the United States Shipping Board and the Embarkation Service of the Army, whereby the Navy undertook the camouflage of all government ships; and in forming its camouflage unit it absorbed the camouflage organizations of both the Shipping Board and the Embarkation Service. The head of the camouflage section of the Embarkation Service was Captain Frederick A. Pawla, one of the most valuable men in the Government for this sort of work. He camouflaged many of the army transports, particularly cargo carriers.

No sooner had the Navy established its camouflage unit

than the British Government responded to a request of ours by sending Lieutenant Commander Wilkinson to America. During his four weeks here he made several addresses before our marine camoufleurs. He pointed out that the primary object of dazzle was not so much to cause the enemy to miss when he fired at a ship as it was to mislead him when he first sighted a vessel, so that he would fail to approximate the correct position for attacking it. He said: "The submarines work with an allowance of $11\frac{1}{2}$ degrees for errors. If you can fool the enemy with 2 points, you can do something; if you can fool him with 4, you can do a great deal; if you can fool him with 8, you have done the trick."

After the departure of Lieutenant Commander Wilkinson, the dazzle plan of camouflage for American ships rapidly superseded all other systems. Between March 1, 1918, and the armistice 1,256 American vessels were painted with dazzle designs. In that period ninety-six American steamships were sunk; but only eighteen of these were camouflaged. Of the eighteen sunk, seven went down as victims of collisions or mines, and the other eleven were torpedoed. These eleven comprised less than one per cent of the total number of ships painted by the dazzle system.

In the details of dazzle camouflage we followed the British closely. The first nine designs issued were exclusively adaptations of British plans, for we had not as yet the proper facilities for studying models and working out our own designs. Then we proceeded to build observation theatres and models. Before a design was adopted it was tested on a model in a theatre. Thereafter, if it were deemed effective, it was adopted as a standard pattern, and the Geological Survey lithographed a profile of it in color for distribution.

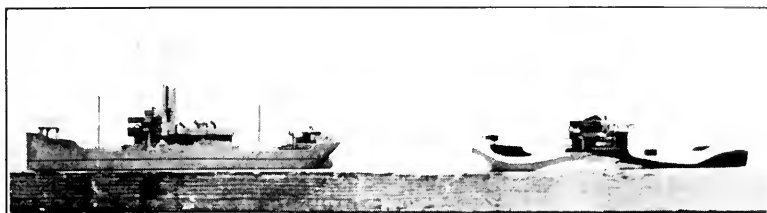
At first every successful design seemed to be largely the result of chance, and we could discover no underlying scientific law to tell an artist what patterns would be effective and what would not. Later our designers came upon the great truth that every valuable pattern bore a relation to some form of a geometric solid, and that the successful design appeared

to divide a hull into solids of various shapes. Once they understood that principle, our designers could go ahead in confidence with new patterns.

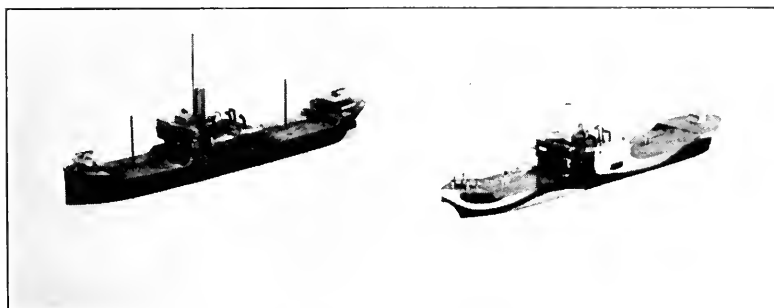
We adopted two general sorts of designs. One sort concealed all structural features, so that it was hard to estimate anything whatsoever about the course of the ship. The other sort gave a definite impression of a course, but an impression considerably at variance with the true course. Two photographs reproduced on accompanying pages show this second effect—*i.e.*, course distortion. In one, the camouflaged model and the plain model are viewed from above and seen to be on exactly parallel courses. In the companion picture, taken from the position of the periscope, the dazzle model seems to be going across the stern of the other. The illusion is created in this way: The salient features of a supposititious vessel, on a course that would carry it across the stern of the uncamouflaged ship, have been projected in camouflage upon the other as it actually headed upon the parallel course. The dark spot on the bow has all the appearance of the shadow cast by the after end of the forecastle, seen from abaft the beam of the ship. In the same way, the after end of the superstructure has been painted on the port side of the bridge, and so on.

The United States collier *Proteus* was painted in reverse perspective. The human eye assumes that the tallest of a row of distant objects which diminish in height with progressive regularity is the nearest, and the shortest the farthest away, and that all are in reality the same height. By reversing the perspective, as was done in the design painted on the *Proteus* (see illustration), the ship was made to seem to head north-east (assuming that the observer is looking north as he views the picture), although as a matter of fact the model is steering southeast.

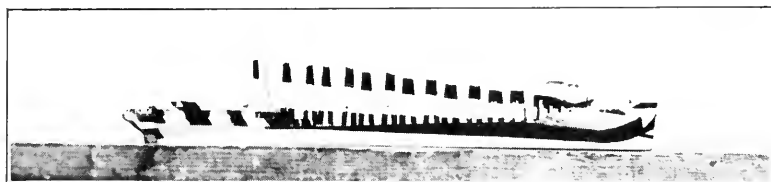
Another model, also illustrated here, displays the geometric-solid design in one of its numerous manifestations. This is a design of the class which made it hard to estimate anything whatever about the course of a ship. The model shown in the



1. CAMOUFLAGED MODEL APPARENTLY STEERING
ACROSS STERN OF PLAIN MODEL

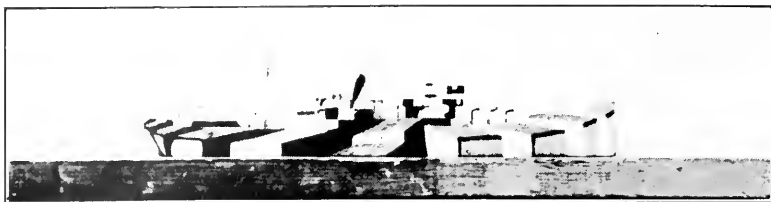


2. VIEW FROM ABOVE SHOWS MODELS ON
PARALLEL COURSES

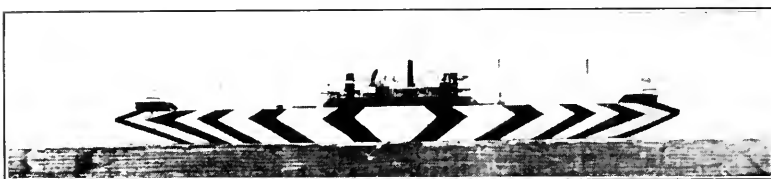


Photos from Bureau of Construction and Repair, U. S. N.

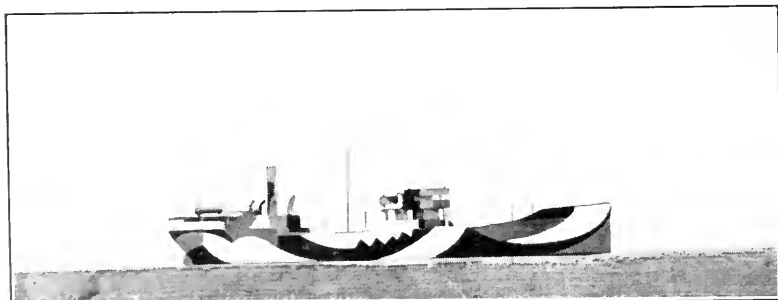
NAVY COLLIER *PROTEUS* (MODEL) APPEARS TO HEAD
NORTHEAST; ACTUAL COURSE, SOUTHEAST



EXTREME DESIGN OF GEOMETRIC-SOLID TYPE



MODEL OF HOG ISLAND STANDARD SHIP CAMOUFLAGED
WITH DESIGN RESEMBLING BEVELED PERIPHERY
OF WHEEL



Photos from Bureau of Construction and Repair, U. S. N.

EXTREME DAZZLE DESIGN. TANKER MODEL, ACTUALLY
HEADING SOUTHEAST, APPEARS TO BE
STEERING NORTHEAST

illustration is steering southeast; yet both bow and stern appear to be turned away from the observer.

Another view shows a standard 8,000-ton Hog Island ship, especially built for deception, and then camouflaged with a dazzle pattern. The view was taken from a point almost broadside on, but the model might be turned several points either way without any clear change in the apparent position. This design was particularly clever in respect of making both bow and stern apparently turn away. The painter, instead of depicting the imaginary geometric form itself, shows us a design as it would appear if painted on such a geometrical form. The shape suggested by the design is that of one sector of a huge wheel, with the periphery beveled to a sharp edge. If a regular design of spokelike bands were painted outward from the imaginary hub of this wheel, to turn over the rim and go back again into the center on the under side, the appearance of the edge would be similar to that of the design shown.

The tanker shown in another illustration is in reality steering southeast, although she appears to be going northeast. Geometrical forms steering northeast were projected upon the model when it was steering ninety degrees further toward the south. This was an extreme design and one typical of the first American efforts, which were designed to give the greatest possible distortion. Experience showed that extreme designs were weak, because the U-boat observer could soon see clearly that the mass of the ship was not moving on the line indicated. The latest tendency was toward moderate distortion, which would be effective through longer periods of observation. Since ships were often sighted nearly head-on, the best designs were those which were capable of double interpretation. They left the U-boat commander in doubt whether the vessel would pass to port or to starboard of him.

In all, the Navy created 495 designs of dazzle camouflage. Lieutenant Commander Wilkinson personally designed patterns for the troop transport *Siboney* and the navy ship *Prairie*. In England he designed the camouflage for the *Leviathan* and for thirty-five of our destroyers. The camouflage of battleships

was of little use, because of their conspicuous bow wave and their unmistakable basket masts.

One interesting development of the painting of ships in war time was the use by the American Navy of the so-called optically reactive paint. There was always danger that our submarines would be sunk by our own gun fire, and for a long time we painted on them special recognition marks in white. But it was borne in mind that the U-boats might at any time disguise themselves with our recognition marks. Then the Navy came into possession of optically reactive paint. This paint could be made in all colors. To the naked eye there was nothing unusual about it; but, viewed through a special filter which could be attached to goggles or even to binoculars, the paint, regardless of its outward color, showed as a brilliant red, visible, even in foggy weather, at great distances. The paint was tested at New London, Connecticut, in August, 1918. Three American submarines were painted all over in reactive paint, with their recognition marks in ordinary paint of the same outward color. Through the filter, at a distance of half a mile, the submarines showed brilliant red, with their recognition marks in black. The weather was hazy with a rising fog.

The Germans themselves, when taken prisoners at sea, affected to be contemptuous of all camouflage. Said the commanding officer of the captured *UB-55*, when asked what he thought of dazzle painting: "We have always wondered why you waste such an enormous amount of paint. Submarine officers never pay much attention to the hull of a vessel when judging her course or speed, but base their judgments mainly on funnels and masts. We have always been instructed not to judge by a bow wave. Dazzle painting is of no use at all during the daytime, but an inexperienced officer might be misled once or twice by it at night. I, myself, made an error of judgment once when attacking a ship at night, the bow of which was painted black. This made the ship appear shorter than she was in reality." Of course, this was exactly the correct thing for the enemy officer to say if the U-boat officers were being bothered by dazzle camouflage; and the figures of sink-

ings and attacks, though not conclusive, show that they *were* bothered considerably. The British Admiralty estimated that distortion painting improved a ship's chances thirty per cent.

And the practical experience of our own navigators at sea showed that dazzle camouflage was effective. As soon as the armistice was declared, merchant captains generally requested that the camouflage be removed at once, because it created a danger of collision. The twin transports *Northern Pacific* and *Great Northern* were so well camouflaged that, when they were proceeding in company at sea, each had to watch the other closely to keep out of her course.

An accompanying illustration shows a dazzle pattern that unquestionably saved a ship. This was the army cargo transport *Tottori Maru*, a chartered Japanese ship. On October 15, 1918, two torpedoes were fired at this vessel in the war zone. The lookouts did not see the wakes in time to steer clear of them. Both torpedoes passed a few feet ahead of the ship, one after the other, each about the same distance away. It required a close scrutiny of the *Tottori Maru* to discover that the apparent bow was only a painting on the side of the ship, and that the actual bow was several feet ahead. The apparent course was a distortion of several points. The commander of the *Tottori Maru* reported his conviction that the submarine had fired to hit the ship on her apparent course, and that this was the reason why it had missed her entirely.

CHAPTER XXXIII

HEROES UNSUNG

WHILE the convoy system was successfully defending the world's tonnage from the submarines, there was in progress an offensive campaign which continually increased in effectiveness and made it more and more difficult for the Germans to continue their underwater operations. The American Navy took into the war the definite tradition that the best defense is an attack; and some of the most notable and effective exploits which made life miserable for the U-boat crews and shackled their effectiveness were either instigated by Americans or carried out with their coöperation.

Of course we cannot monopolize the credit for either ingenuity or bravery. The feat of the British in destroying the submarine bases at Zeebrugge and Ostend will live long as a conspicuous example of the sheer courage and supreme sacrifice of which the Briton is capable. The British were also the inventors and principal operators of the so-called mystery ships. These were tramp steamers loaded with lumber or other unsinkable cargo which ensured buoyancy after a torpedoing, and heavily armed with masked guns hidden under structures which were apparently part of the regulation equipment of deck houses. If a mystery ship were torpedoed, the crew apparently left her in a panic; but when the U-boat came up to inspect and rifle its prize, as it sometimes did, the sides of the false deck houses suddenly dropped down, and half a dozen British guns blew the submarine out of water before it could submerge.

When America entered the war our naval forces found in existence the depth bomb, a British invention. The bomb was

filled with high explosive and controlled by a pressure gauge that would set off the charge at any desired depth. The explosion was so terrific that it would crush any submarine near it. American destroyers accounted for a number of U-boats with these murderous charges; American munitions factories built thousands of depth charges; and America's own inventive contribution to the weapon was the so-called Y-gun, which, if desired, threw out from the stern of a vessel two depth charges at once, and threw them so far that the vessel's own hull would not be injured by the explosions.

One of the most effective measures in the offensive against the U-boat was the construction of the well-known Northern Barrage, a wall of mines laid down as a fence between the northern extremity of Scotland and the shoal waters of the Norwegian coast. The barrage made it extremely difficult for the enemy submarines to get out of and into the North Sea. The Northern Barrage became a fact largely because of American initiative and toil. The British had considered the scheme impracticable. Admiral Strauss, of our naval forces abroad, advocated the plan and received instructions to go ahead with it. The British Navy assisted with the work. American factories built ninety per cent of the mines used, American ships freighted them across the ocean, and American vessels and crews planted three-fourths of them. The Northern Barrage, on its huger scale, was like the trotline which a barefooted fisherman sets at night in the Mississippi River for catfish. We constantly patrolled the barrage with light-draft surface boats; and ever and anon the Yankee sailors experienced the excitement of feeling the concussion and witnessing the geyser of salt water that told of another U-boat come to its end.

In the anti-submarine offensive there occurred a brilliant aviation exploit of which the American public has heard little, although American naval aviators were largely responsible for its success. Up to May, 1918, the deadliest region in the world for merchant shipping was in the shore waters of France just off the mouth of the Loire River. Between Penmarc'h Point on the north and the Isle d'Yeu on the south, the enemy

submarines were sinking on the average one ship a day, and had been sinking tonnage at this rate for several months. In May the joint navies of France, Great Britain, and the United States established what was known as the Aërial Patrol of the Loire. The United States was a heavy contributor of both aircraft and personnel. The creation of the patrol brought to an abrupt end the U-boat activities in this vicinity. Instead of the ship a day, the submarines were able to sink only three vessels in this area between May and the declaration of the armistice six months later, a reduction in destructive efficiency amounting to ninety-nine per cent. The aviators themselves sank no submarines, but in the relatively shallow waters they could spot them and reveal their positions to the surface craft. The first two or three U-boats that went into the area after the patrol was established never returned to their bases, and the German naval command thereupon virtually abandoned the mouth of the Loire as a theatre of operations.

The sinking of a U-boat at sea was always a difficult fact to prove. The British Admiralty, which constituted itself the umpire in the competition, refused to concede a sinking unless the proof were positive. Until the end of the war, therefore, the number of accredited sinkings remained low. Then, with the armistice, we could get frank information from the Germans themselves; and from them we learned that, of the 422 submarines of all types which Germany possessed in 1914 or built during the war, 203 set out to sea and never returned again. Thereupon the British Admiralty analyzed the campaign and apportioned the credit for the successes. The American Navy, having operated in only part of the campaign, made no attempt to summarize it; but the Admiralty's estimate was embodied by Admiral Sims in his report to the Navy Department.

In the first place the Admiralty set down various measures of attack upon submarines in the order of their effectiveness, as follows:

- (1) Depth charges
- (2) Mines

- (3) Torpedoes from Allied and American submarines
- (4) Mystery ships
- (5) Gun fire of patrol craft

There were numerous other means by which the submarines came to grief, but the above were declared to be the five most effective ones.

Of the 203 submarines sunk, according to the British figures, ninety per cent (about 180 submarines) were credited to the British Navy, five per cent (about 10 U-boats) to the American Navy, and the rest to the naval forces of France and Italy. Of these sinkings, we could prove but two to the satisfaction of the Admiralty. One can scarcely imagine these figures as being accepted by American sailors. They are likely to suspect that the Admiralty required the other belligerents to prove their sinkings, and then claimed for the British Navy all victories which the others could not substantiate as their own.

The late Colonel Samuel Maverick of Texas built up an enormous herd of longhorns by that process. In the old days when the range was free, the herds ran together, and the cattle owners experienced great difficulty in identifying their own animals, until they adopted the expedient of branding. All the Texas cattlemen came to submit and register their brands. Last to appear was the astute Colonel Maverick. He maintained that his predecessors had literally exhausted the known range of geometrical, trigonometrical, hieroglyphic, and iconographic forms, and that therefore there was no possibility of his finding a brand that some other ranchman had not already preëmpted. "Yet no matter, gentlemen," quoth he; "there is, as you will see after a moment's consideration, no need for me to have any brand at all; because if the other herds are branded, it is obvious that all the unbranded critters belong to me."

The British summary gives the Northern Barrage credit for the destruction of six submarines. The American sailors who patrolled the barrage insist that they witnessed with their own eyes at least that number of explosions; and it is reason-

able to suppose that the barrage may have ended the careers of other submarines with no one present to observe.

One serious objection that may be made to the Admiralty's summary is that it overlooks altogether a force which probably contributed as much as any other to the success of the campaign against the submarine. We will not speak of the men who stood by the guns on the merchant vessels of other nations. Consider only the men who stood by our own. About 500 American cargo ships during the war were armed to defend themselves against the U-boats. The average ship's armament consisted of two guns. The average ship's gun crew, or armed guard, as it was officially called, was twenty men. Here, then, was a force of 10,000 young Americans behind a thousand guns—Nimrods out for the biggest game in the most exciting venery the world had ever known. To count this force out, when listing the measures most effective in destroying U-boats, is an affront to common sense. Indeed, it is probable that the armed guards on the ships in our convoys accounted for more submarines than are credited, in the British summary, to the whole American Navy.

Why were the armed guards overlooked? Perhaps it is only natural that they should have failed to secure the recognition which they so well earned. The conspicuous naval figures of the war were those who commanded the permanent fighting forces—the cruisers and battleships, the headlong, picturesque destroyers. These officers knew nothing about the gun crews or their work, for the guardsmen were not under their command; yet it was to these heads of the traditional forces that the public looked for its account of the submarine war, and from their lips it heard the story. The armed guards were attached to a new service, an emergency branch, the Naval Overseas Transportation Service, which was to be dissolved as soon as the need for convoying and armed protection was at an end. And because the guardsmen existed as only an incidental part of an organization chiefly concerned with other matters, they served on their rusty, unromantic cargo carriers without a Homer to celebrate them, and finished their task



From The War College Collection

AMERICAN CARGO TRANSPORT, SHOWING AFTER GUN



U. S. Navy Official Photo

GUN CREW ON CARGO TRANSPORT

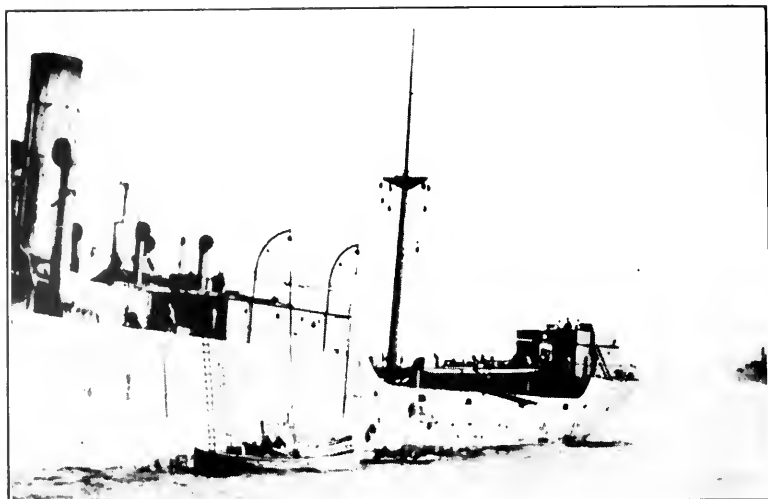


Photo by International Film Service

**TORPEDOED! LIFEBOATS DOWN, MONKEY LADDERS
OVER RAIL, AS ESCORT VESSEL RACES UP TO
RESCUE CREW OF STRICKEN
CARGO BOAT**



British Official Photograph

**THE DREAD SILHOUETTE OF A SUBMARINE
RUNNING AWASH**

only to find that the people generally had been unaware of their existence in the war scheme.

No branch of naval service lived in greater danger or called for hardihood, resolution, and judgment in a higher degree. The very theory of the convoy plan, if it did not deliberately sacrifice the cargo boats to the safety of the troopships, at any rate so operated them that an attack upon them was an easier and safer proposition than an attack upon a troop convoy. The escort of cargo vessels was weaker than that of troopships; they had none of that speed which was the greatest single factor of safety at sea; moreover, the conditions of the great game were such that cargo boats were bound to run the gauntlet on almost every voyage. The slow cargo carriers were bleating lambs put out in the byways of the sea to entice the underwater tigers away from the precious argosies of human freight that ran the troop lanes. Every cargo-ship gun crew knew this well. The men knew that, as things went, the odds were against them; that they could expect no quarter. Yet they stood at their posts and faced the foe gallantly on unequal terms; and sometimes they emerged from the encounters in triumph.

Although they lacked a spokesman, these ten thousand armed guardsmen who stood watch night and day on the forecastle and after decks of the vulnerable cargo ships left behind them in the annals of the Navy Department their own plain-spoken epic. Each armed guard commander—he was usually a non-commissioned officer—was required to keep a war diary, to set down therein certain data demanded by regulations, and to file this narrative from time to time with the Naval Overseas Transportation Service. From these narratives can be pieced together an important chapter of the history of the submarine war. The narrators were doers of deeds and not singers of songs, and their writings are what you would expect—blunt, matter-of-fact talk, *sans* frills or varnish.

Review the adventures of the American tanker *Silver Shell*, operated by the Shell Oil Company of California, with an armed guard on board manning two four-inch guns under the

direction of William J. Clark, chief turret captain. The *Silver Shell*, 5,605 gross tons, left New York on May 10, 1917, with a cargo of oil for French and Mediterranean ports. She reported at Gibraltar May 25, and early in the morning of May 27 departed for Marseilles. Next day at 5.35 p.m. the lookout sighted a submarine off the starboard beam. The submarine flew no flag and showed no other mark of identification; but since this was a region of the sea in which French and Italian submarines were in the habit of cruising, Chief Turret Captain Clark contented himself with loading both guns, hoisting the American flag, and waiting ten minutes to see what the submersible would do. At the end of that time, during which the submarine steadily closed in on the tanker, the armed guard commander fired the after gun as a warning. Let Chief Turret Captain Clark tell what happened next:

“At the same instant of our flash the submarine fired a shot, the shell dropping 100 yards off amidships. The ship was swung to port to bring the submarine astern. Twenty-five rounds were fired at the submarine, the last two of which appeared to be hits. As the last shot landed the submarine’s bow raised up and went down suddenly. The crew of the submarine, who were on deck [firing the gun], did not have time to get inside, so it is believed that there is not much doubt about her being hit. The submarine fired in all thirty-two rounds, the last four of which were shrapnel and exploded overhead. The second shot from the submarine dropped 100 yards off our starboard beam, the range perfect. [Note.—The direction, however, was bad, since, as will be noted, the *Silver Shell* was heading directly away.] The third shot was off the port beam with the same range. [Again bad direction.] As there was a heavy ground swell running, it is believed that caused the submarine to miss hitting the *Silver Shell*. The fourth shot passed over the bridge, and the following shots passed over to the right and left. The submarine appeared to be 250 to 300 feet long. There were two guns mounted on the deck, a six-inch (apparently) gun forward of the conning tower and a small gun aft. The forward gun was the only one

used. [Remember that the *Silver Shell* engaged in this battle with four-inch guns and was therefore outranged as long as the submarine cared to keep the distance.] The first shot fired at the submarine only reached halfway, so the submarine was about 7,000 yards off." [The *Silver Shell's* guns had a range of about 3,500 yards.]

The armed guard commander neglected to emphasize the slight detail that this firing kept up for nearly an hour and a half, during the entire early part of which the gun crews were under fire of shell and unable to respond effectively with their lighter guns. Still there was no thought of surrender. The men stuck grittily to their positions until the overconfident U-boat commander, closing in, as he thought, to clinch the victory, found reason to regret his decision. Clark concluded his narrative as follows: "There were no casualties. As soon as the submarine fired the first shot an S. O. S. call was sent out, giving the position and course, which was answered by F. U. T. (Toulon) stating assistance was under way. A few seconds later a Spanish ship began sending with her wireless with apparent intent to block our message."

The master of the *Silver Shell*, John T. Charlton, gave further details in his report: "The speed of the *Silver Shell* had been raised to fourteen knots, but the submarine continued to gain. At about 7.00 p.m. one of the shots of the steamer struck the submarine flush, hitting the ammunition on the deck. There was a flash of flame, and within a minute she had disappeared."

An American naval officer at Toulon who investigated the engagement reported: "At the prefecture there is no report of any submarine being sighted in that vicinity since the engagement of the *Silver Shell*. There is no doubt in my mind but that the submarine was sunk."

Men have been hanged on evidence flimsier than this, but it was not proof with the Admiralty. This was one of the first American encounters with a submarine and, if we accept the evidence as conclusive, the first U-boat sunk by Americans.

On June 4, 1917, the armed guard of the American freight

steamer *Norlina*, owned by the Garland Steamship Company, Baltimore, succeeded in all probability in sinking an enemy submarine as the result of an exploit which, for audacity, ranks high. It was just before the days of cargo convoying. The *Norlina*, having discharged her cargo in a British port, was proceeding westward around the northern coast of Ireland in company with three British cargo vessels, all armed and steaming together for mutual protection. About five o'clock in the afternoon the group encountered U-boats. One of the British ships on the flank of the impromptu convoy staged a half-hour gun duel with an enemy submarine, without particular damage to either side. It ended when the U-boat submerged. Twenty minutes later another ship of the group, the British cargo vessel *Manchester Port*, broadcasted an S. O. S. proclaiming that she was being attacked by a submarine directly off her stern. The armed guard of the *Norlina* were at supper; but, realizing that danger was imminent, they left their places at the mess table and set a close watch at the guns. About 6.30 o'clock the *Manchester Port* wirelessly that she had beaten off the U-boat and was not damaged.

The trouble now seemed to be over; but the armed guard still scrutinized the surface of the water, and the *Norlina* kept going at top speed. Suddenly a periscope appeared off to port, and almost immediately one of the gunners sighted a torpedo and shouted to the bridge, "Here she comes! Torpedo port side!" The chief officer ordered the helm put down hard to starboard, but it was too late. The torpedo was near the surface, its propeller kicking up a wake of whitecaps and its outline so plain that every petrified watcher on deck could see its red head and its tapering ten feet of length.

The *Norlina* was not only unloaded, but she was carrying so little ballast that she rolled heavily in the sea. Her empty, echoing steel tank of a hull formed, in effect, a gigantic bass drum; and as the half-ton torpedo came into her at forty or fifty miles an hour, it was as if the drum had been struck by the hammer of Thor. The boom was so loud that every person aboard the *Norlina* assumed without question that there had

been an explosion, and at once the master gave the command to abandon ship. Some of the crew of foreigners fell into a panic, which was quieted only at the point of a gun held by one of the mates. Presently all boats were safely launched, and the entire ship's company left the supposedly sinking vessel, except her three navigating officers and Chief Boatswain's Mate O. J. Gullickson, commander of the armed guard, and his assistant. The U-boat commander observed the lifeboats leaving the *Norlina*, assumed that the ship was sinking, and started away at full speed on the surface to try to bag the other three ships, which had now turned and were racing away for dear life.

But the *Norlina* was not sinking. She was not even leaking, as those who remained on board soon discovered when they began sounding the bilges and inspecting the holds and engine rooms. The thing that could happen only once in ten thousand times had actually occurred. The torpedo had not exploded when it struck: it had bounded back off the hull and sunk.

Gullickson blew his whistle, summoning back the gunners. They came swarming up the Jacob's ladders and raced to their two guns. The submarine was now about a mile away and speeding toward the other ships. The engine-room force went back to their stations, the ship rapidly gained headway, the captain steering directly at the retreating periscope, and the *Norlina* opened fire. Meanwhile the U-boat commander had observed what was going on, and at the first shot the submarine turned and came tearing back again toward the American vessel, evidently determined this time to make a good job of the sinking. The fighters on the *Norlina* gave credit to the courage of the U-boat commander for heading directly into the barrage of shell from the guns of the tanker. The marksmanship of the gun crews was excellent, and all the shots were falling close to the periscope. The U-boat came on intrepidly, reducing the distance finally to 600 yards. Meanwhile the captain of the *Norlina* had stopped the engines and steered the ship so that it lay broadside to the submarine, a dangerous position, but one which allowed both guns full play. The war

diary of Chief Boatswain's Mate Gullickson describes the *dénouement*:

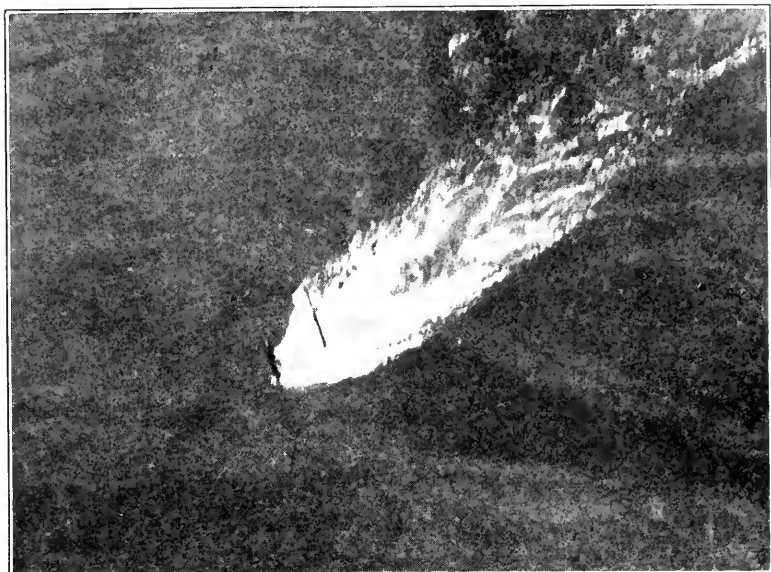
"Suddenly shot from forward gun hit just in front of periscope, making it submerge and a light blue smoke come up from astern of the submarine. Periscope appeared again, range now 600 yards, when a shot from the after gun hits it square on the water line, making small bits of steel fly, which may have been bursting of shell, and causing a great commotion of bubbles, etc., in the water."

Another observer on the *Norlina*, the wireless operator, reported to the owners as follows: "When about 600 yards off our starboard quarter, a shell from our forward gun hit her and she submerged. Again she appeared, and our after gun hit her and blew away her periscope. Another shot from our forward gun fell right on top of her. There was a shower of black specks rising high in the air, followed by a great commotion of bubbles of water and a light blue smoke arising from the stern of the submarine. Our crew, which were lined up against the starboard rail watching the battle, gave a hearty American cheer when the submarine disappeared.

"The *Norlina* fired nineteen shots in all. One of the gunners afterwards said we ought to have given them two more and made it twenty-one shots, the presidential salute."

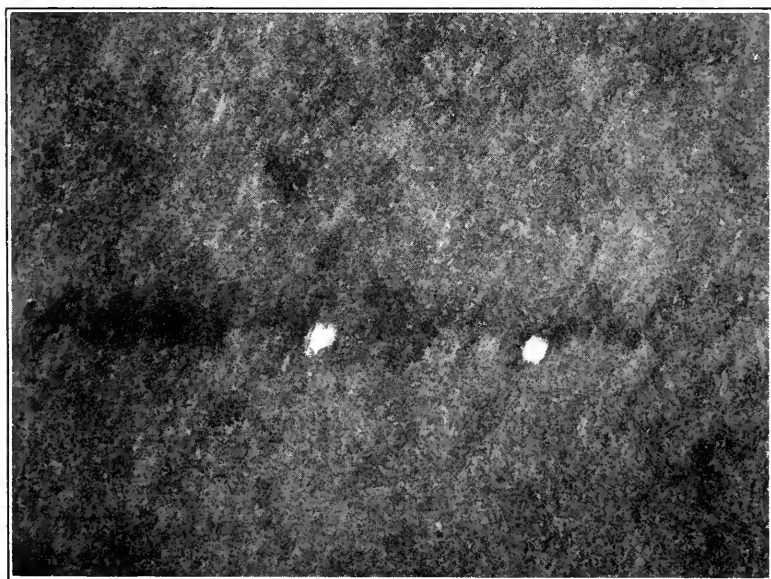
This was another instance of a probable U-boat sinking not listed in the official record.

Reversing the habits of the Galápagos turtle, the U-boat stayed submerged by day, but at night came to the surface to give its crew rest in the open air, refill its air tanks, charge its storage batteries, and communicate by wireless with its own headquarters. Such was the position of an unsuspecting U-boat on the black, windy evening of October 30, 1917, when it was surprised and almost rammed by the American ship *Borinquen*, loaded with American army supplies and running, completely darkened, into the Bay of Biscay, two days out from the Gironde River. It was a few minutes before midnight. The submarine was sighted by the *Borinquen's* lookout when it was less than seventy yards away off the port bow. The forward



British Official Photograph

**TWO-PERISCOPE SUBMARINE SUBMERGING, AS SEEN
FROM AIR**



British Official Photograph

**AËRIAL VIEW OF SUBMARINE ONE HUNDRED FEET
BELOW SURFACE**

gun crew had the chance for a free, pointblank shot at it over the sights. The men instantly trained the gun dead on the U-boat; and then a sort of buck fever of the sea laid hold of the mind and body of the *Borinquen's* gunner, whose duty it was to pull the lanyard and fire the weapon. The gun was aimed, but the pointer failed to fire. His fit of nerves lasted only a few seconds, but in that interval the opportunity was lost, for the ship ran by the submarine and put it out of range of the forward gun.

The U-boat commander maneuvered his craft with much skill in the attempt to get out of his predicament. No use to try to submerge, for that would take him several minutes, during all of which time he would be helplessly within range of the *Borinquen's* after gun and a fair mark for the gunners. Therefore he started his motors and ran on the surface directly for the stern of the *Borinquen*, hoping to get in under the bearings of the after gun. The arc of depression of the gun was limited, since the weapon could hardly be pointed down through the deck and the platform. The U-boat commander evidently attempted to get into this safe area and then dive at full speed, with some chance that he would reach safety before the gunners could get the range of his disappearing conning tower.

The skipper of the *Borinquen* observed this intention and acted instantly to forestall it. The submarine was closing in from the quarter. The *Borinquen's* captain turned the helm a little, so as to throw the U-boat directly into the racing waters of the ship's wake, where it lost headway and fell back into the range of the after gun. The crew of that gun was ready. The first shot, fired as low as the arc of depression permitted, went high, so close was the U-boat to the vessel's stern. "The second shot," said Chief Gunner's Mate T. J. Beerman in his war diary, "carried away the conning tower of the submarine, which I saw myself. The third shot also hit the submarine and I saw the explosion, which was very distinct. The submarine appeared to stop dead in the trough of the sea after this shot. The fourth and last shot was fired while the submarine was

under a swell, and fell about ten yards short. The last seen of her she was going down, listed to port, with her bow sticking up in air and her stern down. She was going down in an upright position."

As a further diversion during this exciting time, the *Borinquen's* firing-room crew ran on deck in a panic when they heard the shooting and had to be driven back to their stations at the point of a pistol.

That same night, not more than two hours later and only a short distance away from the safety of the harbor of Brest, at a point not far away from the *Borinquen's* encounter, the army transport *Amphion*, loaded with animals for the A. E. F., had an almost identical experience. It was 2.45 o'clock on a rough morning at sea when the *Amphion*, which had lost her convoy in the fog of the evening before, almost ran down a submarine that was awash. The U-boat was sighted close ahead on the port bow. The officer on the bridge threw the wheel to starboard and tried to ram the submarine. At the same time the forward gun on the ship opened fire. Three quick shots seemed to take effect. The second shell struck near the conning tower and exploded. The third seemed to hit the submarine just behind the conning tower. As the *Amphion* went by the U-boat, the after gun fired a shot which hit close to the conning tower, but the submarine was then submerging fast. The gun crew of the *Amphion* was officially commended for its behavior in this engagement.

By the beginning of 1918 the army cargo boats had become so numerous in the war zone that encounters between our gun crews and the U-boats were of almost daily occurrence. On January 6 the U. S. A. C. T. (United States Army Chartered Transport) *Harry Luckenbach*, with a cargo of Welsh coal for our base at Pauillac, was torpedoed. It sank in five minutes, with the loss of eight men. This vessel was in an escorted group of twenty ships. About half an hour before the *Luckenbach* was hit, the ship ahead of her in column was torpedoed. On January 8 the U. S. A. C. T. *Artemis* fired five shots at a periscope, but missed it. Next day the cargo transport *Nanse-*

mond, off the coast of France, fired at, but missed, a submarine running awash a long distance away from her. On the 15th a torpedo went harmlessly past the U. S. A. C. T. *War Song*.

On Sunday morning, January 13, the army freight transport *Nyanza* had a memorable encounter. About 9.30 o'clock the lookout sighted a silver periscope half a mile off the port beam, and at the same instant a torpedo was seen coming straight at the ship. The helmsman put the wheel down hard, and the stern swung just in time to clear the torpedo. It was an instance in which prompt action at the wheel saved a vessel from destruction. The turn of the ship put the submarine astern. The *Nyanza* fired two shots at the periscope and then raced for safety. The U-boat commander promptly decided to give chase. Before he could do this, however, he had to come to the surface and start his oil engines, and this time-consuming maneuver gave the *Nyanza* a start of several miles. The U-boat, with its surface speed of fifteen or sixteen knots, could easily out-foot the cargo boat, and thereafter the enemy commander played a cat-and-mouse game with the *Nyanza*. He would come up within 5,000 yards of the *Nyanza*, but still well out of range of the small guns on the cargo ship, and open fire with six-inch shrapnel. Because one of his guns was mounted abaft the conning tower, he zigzagged in order to use both guns. Whenever he zigzagged, he lost distance (for the *Nyanza* was racing straight ahead) and slowly dropped back out of range. He kept up this unequal fight for two and a half hours, racing up to within about 5,000 yards of the quarry, zigzagging and firing both guns, and falling back. Whenever he got the range of the *Nyanza* he punished her. In all, he hit the ship five times. One shot passed under the after gun platform, through the shelter house, on down through the iron deck, and into the hold. Another exploded in the armed guard's messroom, wrecking the place. A steam locomotive lashed to the deck of the *Nyanza* was struck twice. Another shot hit the stern of the ship, but ricocheted off without damage. The damage would have been heavier except for the action of the captain of the *Nyanza* in keeping the ship zigzagging slightly—not enough

to lose much speed, but still enough to destroy the accuracy of the enemy's aim.

All this time the Stars and Stripes flew at the stern of the *Nyanza* and the armed guard stood at its guns, the after gun occasionally firing. All the shots fell short until just at the end of the engagement. By that time the submarine had fired two hundred times and the *Nyanza* ninety. Then the *Nyanza* zigzagged so sharply that she lost distance, and the U-boat came up unaware within range of the transport's weapons. The gun crews fired four shots, and they went close—so close that those on the transport believed they had hit the U-boat. At any rate the submarine suddenly turned broadside, keeled over, and disappeared—whether intentionally, no one can say. The gun crews came through uninjured, although the clothing of three of the guardsmen was torn by shrapnel. One cadet engineer was wounded. The Navy Department commended the armed guard for its behavior in this attack.

But it was not all fighting for the armed guards. They shared, too, in the ordinary perils of the sea, made doubly perilous by the conditions of convoying. The armed guard of the cargo ship *Deepwater* figured in a thrilling rescue of the passengers of the Italian immigrant steamer *Cavour*, sunk in a collision in the Mediterranean in December, 1917. The weather conditions at sea during the winter of 1917-1918 were fearful. A cargo convoy which left American ports on February 27 experienced one of the roughest passages of the entire movement. A six-day gale in early March scattered the ships for leagues over the sea, and it took four days to assemble the group again in mid-ocean.

During the incessant winter storms the scenes aboard some of the animal ships were those of brute misery at its extremity. On February 6, 1918, the army animal transport *Hercules*, with a cargo of mules, ran into a storm that carried away the starboard propeller, crippled the steering gear, and forced the helpless vessel to lie wallowing in the trough of a tremendous sea for thirty-six hours, solid green waves continually climbing her decks. There was nothing to do but fasten down the

hatches, the sole inlets for air for the crowded holds below. The result was disastrous to the mules, 250 of which died miserably of suffocation.

About sundown on the last day of February, 1918, the American tanker *Paulsboro*, unloaded and homeward bound southwest of Ireland and three days out of an English port, engaged for three-quarters of an hour in a gun duel with a U-boat, in which the commander of the tanker displayed great skill in seamanship, and the armed guard a fine example of courage. The submarine, awash, was sighted dead ahead in the ship's course, about six miles away. The U-boat opened fire at once and with her first shot demonstrated that she had crack marksmen aboard, for the projectile hit within ten feet of the port side of the tanker, in line with the bridge. At once the *Paulsboro* replied with her forward gun; but she was hopelessly outranged. As the ship swung to starboard, both forward and after gun crews began shooting at the limit of their range scales, and although all their shots fell short, they kept up a steady fire. The enemy aimed with rare precision. His second shot struck the rigging and burst. He then began directing a tandem fire, the shell bursting ahead and on both sides of the bow and passing over the top of the bridge. When the tanker was finally headed away from the enemy, she had more chance; and then it was that the master so maneuvered her as to escape destruction. He watched the submarine's guns, several miles away. As soon as he observed a puff of smoke, he put down the helm hard; and the rapidity with which the ship answered the rudder again and again saved her from being hit.

The enemy had, in the fifty or more shots which he fired, almost perfect range. Shell passed over the length of the ship and to both sides, many of them shrapnel, timed to burst over the deck. One shell struck the ship's side and cut through, exploding in the housing of the steering gear. The fragments of another embedded themselves in the after gun platform. The concussion of a third threw down the crew at the forward gun. The *Paulsboro* threw overboard three smoke boxes, but they failed to obscure her position. One member of the crew was

seriously wounded by a shell-burst, but there were no other casualties.

All this time the *Paulsboro's* guns were outranged. At last the U-boat drew closer. The gun crew elevated their weapons to an altitude beyond the reading on the range scale. They fired, and the shots dropped in the rear of the submarine. At the same extreme range a rapid fire was now kept up, and the submarine apparently dropped back into the barrage. Shell fell either on top of her or close to her bow. At any rate, Chief Gunner's Mate J. E. Reiter, commander of the armed guard, wrote in his diary: "When the range had been obtained by the *Paulsboro* the submarine ceased firing, swung broadside to, and submerged or sank bow first, with the stern up at an angle of about fifteen degrees. She disappeared in about twenty seconds. As there were about twenty minutes of excellent light remaining for gun fire, and the submarine's last two shell fell near the port and starboard bow of the ship, it is believed the submarine was damaged and in distress."

On March 21 the army cargo transport *Chincha*, loaded with general cargo, encountered an enemy U-boat as she was approaching the Straits of Gibraltar. The U-boat stayed back out of range of the *Chincha's* guns, firing deliberately and with great effect. The enemy's third shot wrecked the after gun, killed outright one of the gunners and two members of the ship's crew, and so badly wounded another man that he died six days later in a Gibraltar hospital. The U-boat abandoned the pursuit when a British cruiser answered the transport's S. O. S.

In the early afternoon of March 28 the army transport *Hilton*, which in February had had the weird experience of being trailed for several hours by a pantherlike U-boat, nearly fell victim to a unique piece of strategy executed by two submarine commanders. The *Hilton* was in a convoy bound for America. When she was well out in the war zone, an enemy submarine came up for a few seconds in plain sight of the *Hilton* and about three hundred yards off the starboard beam. All attention was focused on the enemy, and the crew of the



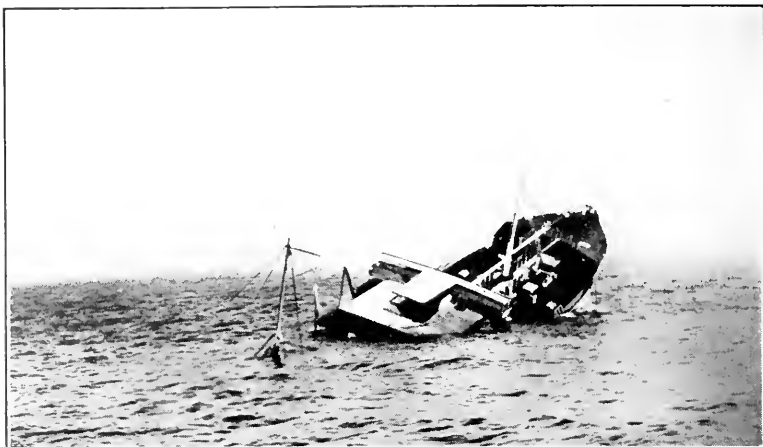
U. S. Navy Official Photo

**FORTY LIVES LOST WHEN *MISSANABIE* SANK EIGHT
MINUTES AFTER TORPEDOING**



U. S. Navy Official Photo

DESTROYER GUN CREW FIRING AT U-BOAT



U. S. Navy Official Photo

THE FINAL PLUNGE



Photo by Kadel & Herbert

A GUARDIAN OF THE TRANSATLANTIC HIGHWAY

single gun which the *Hilton* carried was hastily endeavoring to train the gun on the U-boat, when a torpedo fired from the port side narrowly missed the ship, crossing the wake about fifteen feet away from the propellers. One of the U-boats had evidently risen to attract the attention of the *Hilton's* gunners, thus giving the other a clear shot.

Vessels in convoy were sometimes able to save each other during an attack by firing at torpedoes and either exploding them or so indicating their courses to other ships that they could steer clear. Such a thing occurred on April 24, when the U. S. A. C. T. *Kentuckian* sighted a torpedo wake heading directly for the second ship astern of the *Kentuckian* in the column. A well-aimed shot from one of the *Kentuckian's* guns struck and exploded the torpedo, with a great disturbance of the surrounding waters. On May 29 prompt action on the part of the armed guard of the army transport *Buford* (the ship which carried the deported anarchists to Russia late in 1919) saved the cargo transport *Oregonian* from a torpedo. A torpedo crossed the bow of the *Buford* and headed for the *Oregonian*. The *Buford's* forward gun crew fired two shots in the wake of the torpedo, which was then too far away from the *Oregonian* to be seen by her. The splashes made by the shell marked the wake for the *Oregonian* and she turned and escaped.

The perils of sailing on a gas ship were shown in an incident that occurred on June 10, 1918, when the army transport *Nansemond* ran into heavy weather in the Bay of Biscay. Her deck load of chlorine gas tanks, containing three hundred tons of the deadly poison, broke loose and started to roll about. The order went forth for all hands to put on their gas masks; and then the strangely masked figures reenacted Victor Hugo's description of the attempt to lash down a cannon loose on the deck of a man-of-war. In order to give the crew a chance to secure the heavy cylinders, the ship's engines were nearly stopped, and she was held steady by the helm. The masked crew succeeded in relashing the tanks without damage.

At sundown on August 15, 1918, an American convoy of sixteen cargo boats, bound through the war zone for French

Biscay ports, was attacked. The lookouts on the transport *Montanan*, near the head of the group, sighted two torpedo wakes. Both torpedoes missed; but a third, unseen, struck the vessel amidships on the port side and tore a great hole in the hull. The ship settled rapidly and was straightway abandoned. Two members of the armed guard were drowned as a lifeboat capsized in a heavy sea. The converted yacht *Noma* rescued the survivors. Meanwhile the army cargo transport *Westbridge*, of the same convoy, had developed engine trouble and was compelled to stop about 1,000 yards away from the sinking *Montanan*. The *Noma* kept circling the disabled *Westbridge*, to protect her if possible while she was making repairs. About two o'clock the following morning a torpedo struck the *Westbridge* with a terrific explosion, and she, too, began to sink rapidly. The *Noma* rescued the crew and remained near both derelicts, which floated with decks awash until noon, when both suddenly sank within a few minutes of each other.

One of the French cruisers assigned to the Norfolk Squadron of the Cruiser and Transport Force, *du Petit Thouars*, was torpedoed and sunk on the night of August 7, 1918, while escorting a convoy of twenty-four American cargo ships in the war zone. Shortly afterwards the United States shipping board vessel *Westward Ho*, in the same convoy, was torpedoed, evidently by the same submarine. The *Westward Ho* stayed afloat, and her rescue was one of the war's notable instances of salvaging. The attack occurred not long after one o'clock in the morning, and the armed guard and crew remained on the vessel for nearly twenty-four hours thereafter, protecting her from attack until they turned her over to the wrecking tugs which towed the ship into Brest.

The vessels in the cross-Channel fleet all carried armed guards of the American Navy. These gunners had frequent encounters with the enemy. One such vessel, the *Lake Owens*, built in Detroit, was sunk early in the morning of September 3, 1918, with the loss of five lives. Two minutes earlier, a Portuguese steamer in the same convoy had been torpedoed. The commander of the armed guard on the *Lake Owens*,

Homer Lincoln, chief boatswain's mate, was wounded by the explosion, and every man in the firing room was killed when the torpedo entered the coal bunkers.

One of the last of the army freight transports to be sunk was the *Lucia*, torpedoed at dusk on October 17, 1918, while bound for France in a convoy without escort. The attack occurred in the interval after the ocean cruiser had left the convoy and before the destroyers arrived. The torpedo entered the engine room, instantly killing four men. The explosion put all the machinery out of order, including the wireless. The commander of the armed guard, William O'Brien, thereupon semaphored to the cargo transport *Hawaiian* to broadcast an S. O. S. for the *Lucia*. The sea was calm at the time, but the wind was rising. Since the *Lucia* was not sinking rapidly, the crew and the armed guard remained on board, the gunners watching for the submarine. The wind continued to strengthen during the night and the next morning. Still the ship remained afloat. At daybreak the men on the wreck expected another attack, but none came. The *Lucia* was then in a sinking condition, the after gun platform just clearing the water and the rising waves sweeping over the hatches and gradually filling the compartments which had not been flooded by the explosion. By noon it was decided to abandon the ship. Some of the lifeboats had been broken by the explosion, but there were five intact, besides one life raft. The navigating crew left the ship, but remained near by in the boats; the captain and the armed guard stayed on board, still hoping to get a shot at the submarine. At two o'clock in the afternoon it was evident that the *Lucia* was about to sink. The attack had occurred far at sea, and no help had yet arrived in response to the S. O. S. signal. The commander of the armed guard dismantled the two guns, and then the officers and the gun crews distributed themselves among the five crowded lifeboats. The sea was now rough, and the overloaded boats were kept afloat only by continuous baling. The *Lucia* presently rose to a vertical position and sank, stern first. For six hours the survivors despaired for their lives. It seemed impossible to keep afloat. But at half

past nine in the evening the U. S. destroyer *Fairfax* reached the scene and rescued the survivors.

These experiences have been taken at random from the war diaries. For every incident recounted here, a dozen might be told. Life in the armed guard service was replete with both excitement and arduous work, and it was ennobled by stern devotion to duty.

The diary of Gunner Byrne, commander of the armed guard on the U. S. A. C. T. *Artemis*, described in a few terse sentences a clash with a U-boat in which the enemy came out second best, his entry closing with the sentence: "Cleaned up battery for the day."

Brave fellow! He had just passed through an experience more thrilling than most men ever know: then, like a good hunter, he cleaned his guns and put them in order for the next engagement. And to his matter-of-fact mind it seemed just as important to tell about that piece of routine as to describe the fighting itself. This was the stuff of which the armed guard was made. It is gratifying to believe that it was the spirit of America herself in the war, as we know that it was the spirit of those who kept the great highway open.

APPENDICES

APPENDIX A

TRANSPORTATION OF NATIONAL GUARD TO TRAINING CAMPS, AUGUST, SEPTEMBER, OCTOBER, 1917

<i>State</i>	<i>Number of troops carried on special trains</i>	<i>Number of special trains</i>	<i>Period of movement</i>	<i>Destination of trains</i>	<i>National Guard Division of which troops became part</i>
Alabama	2,540	11	Sept. 4	Camp Wheeler, Macon, Ga.	Thirty-first Division
Arizona	595	1	Sept. 12	Camp MacArthur, Waco, Tex. (Later to Camp Kearney, Cal.)	Fortieth Division
Arkansas	2,702	8	Sept. 9-30	Camp Beauregard, Alexandria, La.	Thirty-ninth Division
California	5,227	20	Sept. 17-27	Camp Kearney, Linda Vista, Cal.	Fortieth Division
Colorado	3,703	10	Sept. 6-Oct. 3	Camp Kearney, Linda Vista, Cal.	Fortieth Division
Connecticut	1,900	5	Late Sept.	Camp Upton, Long Island, N. Y.	Twenty-sixth ("New England") Division Forty-second ("Rainbow") Divi- sion
Delaware District of Columbia	1,327 1,590	3 7	Sept. 4 Aug. 17	Camp McClellan, Anniston, Ala. Camp McClellan, Anniston, Ala.	Twenty-ninth Division Twenty-ninth Division
Florida	3,703	10	Sept. 16 Sept. 3-17	Camp Merritt, N. J. Camp Wheeler, Macon, Ga.	Forty-second ("Rainbow") Divi- sion Thirty-first Division

TRANSPORTATION OF NATIONAL GUARD TO TRAINING CAMPS (Continued)

State	Number of troops carried on special trains	Number of special trains	Period of movement	Destination of trains	National Guard Division of which troops became part
Georgia	1,165	7	Sept. 8-25	Camp Wheeler, Macon, Ga.	Thirty-first Division
Idaho	1,985	4	Sept. 24-Oct. 1	Camp Greene, Charlotte, N. C. (Later to Camp Fremont, Cal.)	Forty-first ("Sunset") Division
Illinois	19,844	50	Aug. 15-Oct. 14	Camp Logan, Houston, Tex.	Thirty-third Division
Indiana	10,416	31	Aug. 20-Oct. 15	Camp Shelby, Hattiesburg, Miss.	Thirty-eighth Division
Iowa	7,325	27	Aug.-Sept.-Oct.	Camp Mills, Long Island, N. Y.	Forty-second ("Rainbow") Division
Kansas	8,864	28	Aug. 24-Oct. 2	Camp Cody, Deming, N. M. Camp Doniphan, Fort Sill, Okla.	Thirty-fourth Division
Kentucky	6,082	20	Aug. 21-Oct. 9	Camp Mills, Long Island, N. Y. Camp Shelby, Hattiesburg, Miss.	Thirty-fifth Division
Louisiana	1,980	2	Sept. 6-15	Camp Beauregard, Alexandria, La.	Forty-second ("Rainbow") Division
Maine	3,276	9	Aug.-Sept.	Camp Devens, Ayer, Mass.	Thirty-eighth Division
Maryland	5,517	19	Aug. 17-Sept. 19	Camp McClellan, Anniston, Ala.	Thirty-ninth Division
					Twenty-sixth ("New England") Division
					Twenty-ninth Division

TRANSPORTATION OF NATIONAL GUARD TO TRAINING CAMPS (Continued)

<i>State</i>	<i>Number of troops carried on special trains</i>	<i>Number of special trains</i>	<i>Period of movement</i>	<i>Destination of trains</i>	<i>National Guard Division of which troops became part</i>
Massachusetts	5,251	13	Aug.-Sept.	Camp Devens, Ayer, Mass.	Twenty-sixth ("New England") Division
Michigan	9,356	28	Aug. 11-Oct. 14	Camp MacArthur, Waco, Tex.	Thirty-second Division
Minnesota	7,440	15	Aug. 19-Oct. 15	Camp Cody, Deming, N. M.	Thirty-fourth Division
Mississippi	939	4	Sept.	Camp Beauregard, Alexandria, La.	Thirty-ninth Division
Missouri	15,132	36	Aug. 23-Sept. 14	Camp Doniphan, Fort Sill, Okla.	Thirty-fifth Division
Montana	657	2	Sept. 11-17	Camp Greene, Charlotte, N. C.	Forty-first ("Sunset") Division
Nebraska	5,292	15	Aug. 15-Sept. 17	(Later to Camp Fremont, Cal.) Camp Cody, Deming, N. M.	Thirty-fourth Division
New Hampshire	2,036	6	Aug.-Sept.	Camp Devens, Ayer, Mass.	Twenty-sixth ("New England") Division
New Jersey	11,412	30	Aug. 17-Oct. 3	Camp McClellan, Anniston, Ala.	Twenty-ninth Division
New York	37,787	97	Aug. 29-Oct. 15	Camp Mills, Long Island, N. Y.	Forty-second ("Rainbow") Division
North Carolina	5,449	23	Aug. 10-Sept. 16	Camp Wadsworth, Spartanburg, S. C.	Twenty-seventh Division
				Camp Sevier, Greenville, S. C.	Thirtieth Division

TRANSPORTATION OF NATIONAL GUARD TO TRAINING CAMPS (Continued)

<i>State</i>	<i>Number of troops carried on special trains</i>	<i>Number of special trains</i>	<i>Period of movement</i>	<i>Destination of trains</i>	<i>National Guard Division of which troops became part</i>
North Dakota	3,021	8	Sept.	Camp Greene, Charlotte, N. C. (Later to Camp Cody, N. M., and Camp Fremont, Cal.)	Thirty-fourth Division and Forty-first ("Sunset") Division
Ohio	24,065	76	Aug. 23-Oct. 14	Camp Mills, Long Island, N. Y. Camp Sheridan, Montgomery, Ala. Camp Bowie, Fort Worth, Tex.	Thirty-seventh Division
Oklahoma	2,576	9	Aug. 18-Sept. 11	Camp Mills, Long Island, N. Y. Camp Greene, Charlotte, N. C. (Later to Camp Fremont, Cal.)	Thirty-sixth Division
Oregon	3,634	12	Sept.	Camp Hancock, Augusta, Ga.	Forty-second ("Rainbow") Division Forty-first ("Sunset") Division
Pennsylvania	16,704	83	Aug. 17-Sept. 14	Camp Mills, Long Island, N. Y. Camp Devens, Ayer, Mass.	Twenty-eighth Division
Rhode Island	106	1	Aug. 21	Camp Sevier, Greenville, S. C.	Forty-second ("Rainbow") Division Twenty-sixth ("New England") Division
South Carolina	2,288	8	Sept.		Thirtieth Division

TRANSPORTATION OF NATIONAL GUARD TO TRAINING CAMPS (Continued)

State	Number of troops carried on special trains	Number of special trains	Period of movement	Destination of trains	National Guard Division of which troops became part
South Dakota	2,094	5	Sept.	Camp Greene, Charlotte, N. C. (Later to Camp Fremont, Cal.)	Forty-first ("Sunset") Division
Tennessee	5,812	22		Camp Sevier, Greenville, S. C.	Thirtieth Division
Texas	10,300	36		Camp Bowie, Fort Worth, Tex.	Thirty-sixth Division
Utah	1,367	5		Camp Kearney, Linda Vista, Cal.	Fortieth Division
Vermont	2,564	10		Camp Devens, Ayer, Mass.	Twenty-sixth ("New England") Division
Virginia	5,920	23		Camp McClellan, Anniston, Ala.	Twenty-ninth Division
Washington	2,066	6		Camp Greene, Charlotte, N. C. (Later to Camp Fremont, Cal.)	Forty-first ("Sunset") Division
West Virginia	3,462	12		Camp Shelby, Hattiesburg, Miss.	Thirty-eighth Division
Wisconsin	16,672	47		Camp MacArthur, Waco, Tex.	Thirty-second Division
Wyoming	1,509	4	Sept. 6-11	Camp Greene, Charlotte, N. C. (Later to Camp Fremont, Cal.)	Forty-first ("Sunset") Division

NOTE.—There was no National Guard organization in New Mexico or Nevada.

APPENDIX B

TYPICAL DRAFT TRAIN SCHEDULE

CALL No. 1446.
MOVEMENT OF NATIONAL ARMY.
 OCTOBER 21-25, 1918.
FROM MINNESOTA TO CAMP FORREST (LYTLE), GEORGIA.
 INDEX (SEE KEY BELOW).

COUNTY	County Seat and Entraining Station.	No. Men.	Schedule No.	Page No.	COUNTY	County Seat and Entraining Station.	No. Men.	Schedule No.	Page No.
Aitkin	Aitkin	24	12	9	Murray	Slayton	30	3	3
Anoka	Anoka	24	11	8	Nicolet	St. Peter	35	3	3
Becker	Detroit	40	12	9	Nobles	Worthington	40	2	2
Beltrami	Bemidji	50	12	9	Norman	Ada	50	7	5
do	Beauette	None			Olustead	Rochester	60	3	3
Benton	Foley	10	5	4	Otter Tail				
Big Stone	Ortonville	10	10	7	Board No. 1	Fergus Falls	35	5	4
Blue Earth	Mankato	40	3	3	Board No. 2	Henning	55	11	8
Brown	New Ulm	60	3	3	Pennington	Thief River Falls	15	7	5
Carlton	Carlton	18	11	8	Pipe	Five City	55	11	8
Carver	Chaska	65	1	2	Pipestone	Pipestone	25	2	2
Cass	Walker	24	12	9	Folk	Crookston	45	7	5
Chippewa	Montevideo	18	10	7	Pope	Glenwood	20	11	8
Chicago	Center City	10	11	8	Ramsey	White Bear	8	11	8
Clay	Moorhead	40	12	9	City Board No. 1	St. Paul	10	8	6
Clearwater	Bagley	10	7	5	City Board No. 2	St. Paul	25	8	6
Cook	Grand Marais (Kalmia Duluth)	None			City Board No. 3	St. Paul	10	8	6
Cottonwood	Windom	15	3	3	City Board No. 4	St. Paul	10	8	6
Crow Wing	Brainerd	40	12	9	City Board No. 5	St. Paul	20	8	6
Dakota	Hastings	30	3	3	City Board No. 6	St. Paul	7	8	6
Dodge	Mantorville	30	3	3	City Board No. 7	St. Paul	10	8	6
do	(Entrain at Dodge Center)				City Board No. 8	St. Paul	8	8	6
Douglas	Alexandria	40	5	4	City Board No. 9	St. Paul	5	8	6
Duluth City	See St. Louis County.				City Board No. 10	St. Paul	None		
Faribault	Blue Earth	30	3	3	City Board No. 11	St. Paul	6	8	6
Filmore	Preston	65	10	7	Red Lake	Red Lake Falls	4	7	5
Freeborn	Albert Lea	65	2	2	Redwood	Redwood Falls (Entrain No. Redwood)	50	1	2
Goodhue	Red Wing	85	10	7	Renville	Olivia	50	10	7
Grant	Elbow Lake	10	11	8	Rice	Faribault	20	2	2
Hennepin	Hopkins (Duluth East)	65	1	2	Rock	Luverne	25	2	2
City Board No. 1	Minneapolis	10	1	2	Roseau	Roseau	30	7	5
City Board No. 2	Minneapolis	None			St. Louis				
City Board No. 3	Minneapolis	2	1	2	County Board No. 1	Duluth R. F. D. No. 1 (Entrain Duluth)	30	12	9
City Board No. 4	Minneapolis	70	1	2	County Board No. 2	Eveleth	30	9	6
City Board No. 5	Minneapolis	12	1	2	County Board No. 3	Ely	10	12	9
City Board No. 6	Minneapolis	None			County Board No. 4	Virginia	20	9	6
City Board No. 7	Minneapolis	25	12	9	County Board No. 5	Chisholm	2	9	6
City Board No. 8	Minneapolis	25	12	9	County Board No. 6	Hibbing	4	9	6
City Board No. 9	Minneapolis	12	1	2	City Board No. 1	Wet Duluth (Kalmia Duluth)	20	9	6
City Board No. 10	Minneapolis	25	1	2	City Board No. 2	Duluth	20	9	6
City Board No. 11	Minneapolis	10	12	9	City Board No. 3	Duluth	18	12	9
City Board No. 12	Minneapolis	24	12	9	City Board No. 4	Duluth	4	12	9
City Board No. 13	Minneapolis	2	12	9	St. Paul	See Ramsey County.			
Houston	Caledonia	48	10	7	Scott	Shakopee	40	12	9
Hubbard	Park Rapids	35	5	4	Sherburne	Elk River	None		
Isanti	Cambridge	45	8	6	Sibley	Gaylord	20	1	2
Itasca	Grand Rapids	35	12	9	Stearns				
Jackson	Jackson	30	2	2	Board No. 1	St. Cloud	80	11	8
Kanabec	Mora	18	4	4	Board No. 2	Melrose	35	5	4
Kandiyohi	Willmar	70	6	5	Steele	Owatonna	30	2	2
Kittson	Hatlock	35	7	5	Stevens	Morris	8	6	5
Koochiching	International Falls	18	11	8	Swift	Benson	40	6	5
Lac Qui Parle	Madison	50	1	2	Todd	Long Prairie	50	5	4
Lake	Two Harbors	None			Traverse	Wheaton	18	10	7
Le Sueur	Le Sueur Center	25	10	7	Wabasha	Wabasha	40	10	7
Lincoln	Ivanhoe	30	3	3	Wadena	Wadena	18	12	9
Lyon	Marshall	60	3	3	Waseca	Waseca	20	1	2
McLeod	Glenco	45	10	7	Washington	Stillwater	35	12	9
Mahnomen	Mahnomen	6	11	8	Watsonwan	St. James	20	3	3
Marshall	Warren	60	7	5	Wilkin	Breckenridge	10	6	5
Martin	Fairmont	35	2	2	Winona	Winona	35	3	3
Meeker	Litchfield	60	6	5	Wright	Buffalo	50	11	8
Miller Lake	Princeton	20	4	4	Yellow Medicine	Granite Falls	50	10	7
Minneapolis City	See Hennepin County.					Total	3500		
Morrison	Little Falls	75	11	8					
Mower	Austin	55	2	2					

KEY.

To ascertain routing and time of departure, refer to page and schedule numbers as above. Departure is invariably made from county seat or headquarters shown in Column 2, Pages 2 to 9. For time of departure from desired points, see Column 6.

Example: Mower County, Page 2, Schedule 2, shows that 55 men move from Austin via C. M. & St. P. to Albert Lea, C. R. I. & P. to Burlington, C. B. & Q. to St. Louis, Ill. Cent. to Martin, N. C. & St. L. to Chattanooga, thence C. of Ga. to Lytle, leaving Austin (Column 6, Line 7) on C. M. & St. P. Train No. 23 at 3:45 p. m., October 22.

The same course is followed in locating routes and schedules from points not located on any railroad. Thus Redwood County, Page 2, Schedule 1, County Seat Redwood Falls (not located on the railroad on which the men entrain), entrain at North Redwood, see Column 6, Line 2, Schedule 1. 50 men in this movement via M. & St. L. to Albia, Wab. to St. Louis, L. & N. to Nashville, N. C. & St. L. to Chattanooga, thence C. of Ga. to Lytle.

TYPICAL DRAFT TRAIN SCHEDULE (Continued)

FROM MINNESOTA TO CAMP FORREST (LYTLE), GEORGIA,
Routes and Schedules.
Schedule No. 1.
ENTRAIN OCTOBER 21, 1918.

1	2	3	4		5	6
			ROUTE			
COUNTY	COUNTY SEAT OR HEADQUARTERS	No. of Men	ROAD	JUNCTION		TRAIN SCHEDULE
Lac Qui Parle.....	Madison.....	50	M. & St. L. Wabash L. & N. N. C. & St. L. C. of Ga.	Alma St. Louis Nashville Chattanooga Lytle		1 Lv. Madison..... October 21. 10 15 a. m. M. & St. L. No. 14. Luncheon at Morton.
Redwood (Entrain at North Redwood).....	Redwood Falls (Redwood).....	50	M. & St. L. Wabash L. & N. N. C. & St. L. C. of Ga.	Alma St. Louis Nashville Chattanooga Lytle		2 Lv. North Redwood 12 45 p. m. M. & St. L. No. 14. 3 Lv. Gaylord..... 2 49 p. m. M. & St. L. No. 14. 4 Ar. Minneapolis..... 5 30 p. m. M. & St. L. No. 14. Dinner at Minneapolis.
Sibley.....	Gaylord.....	20	M. & St. L. Wabash L. & N. N. C. & St. L. C. of Ga.	Alma St. Louis Nashville Chattanooga Lytle		5 Lv. Minneapolis..... 7 00 p. m. M. & St. L. Special. 6 Lv. Hopkins..... 7 40 p. m. M. & St. L. Special. 7 Lv. Chaska..... 7 50 p. m. M. & St. L. Special. 8 Lv. Waseca..... 9 30 p. m. M. & St. L. Special.
Hennepin.....	Minneapolis: City Board 1..... City Board 3..... City Board 4..... City Board 5..... City Board 9..... City Board 10.....	10 12 70 12 12 25	M. & St. L. Wabash L. & N. N. C. & St. L. C. of Ga.	Alma St. Louis Nashville Chattanooga Lytle		9 Ar. Albia..... 6 15 a. m. M. & St. L. Special. 10 Ar. Albia..... 7 05 p. m. Wabash. Special. Breakfast and luncheon in diner.
Hennepin.....	Minneapolis: City Board 1..... City Board 3..... City Board 4..... City Board 5..... City Board 9..... City Board 10.....	10 12 70 12 12 25	M. & St. L. Wabash L. & N. N. C. & St. L. C. of Ga.	Alma St. Louis Nashville Chattanooga Lytle		11 Ar. St. Louis..... 6 00 p. m. Wabash. Special. Dinner.
Hennepin.....	Hopkins (County Board).....	65	M. & St. L. Wabash L. & N. N. C. & St. L. C. of Ga.	Alma St. Louis Nashville Chattanooga Lytle		12 Lv. St. Louis..... 7 00 p. m. L. & N. Special. October 22. 13 Ar. Nashville..... 8 00 a. m. L. & N. Special. Breakfast.
Hennepin.....	Hopkins (County Board).....	65	M. & St. L. Wabash L. & N. N. C. & St. L. C. of Ga.	Alma St. Louis Nashville Chattanooga Lytle		14 Lv. Nashville..... 9 00 a. m. N. C. & St. L. Special. Luncheon en route.
Carver.....	Wabash.....	65	M. & St. L. Wabash L. & N. N. C. & St. L. C. of Ga.	Alma St. Louis Nashville Chattanooga Lytle		15 Ar. Chattanooga..... 3 00 p. m. N. C. & St. L. Special. 16 Lv. Chattanooga..... 3 30 p. m. C. of Ga. Special. 17 Ar. Lytle..... 4 00 p. m. C. of Ga. Special.
Waseca.....	Waseca.....	20	M. & St. L. Wabash L. & N. N. C. & St. L. C. of Ga.	Alma St. Louis Nashville Chattanooga Lytle		
Total..... 401						

Schedule No. 2.
ENTRAIN OCTOBER 22, 1918.

Rice.....	Fairbault.....	40	C. R. I. & P. C. B. & Q. I. C. N. C. & St. L. C. of Ga.	Burlington St. Louis Mertin Chattanooga Lytle		1 Lv. Fairbault..... October 22. 4 50 p. m. C. R. I. & P. No. 20. 2 Lv. Owatonna..... 5 25 p. m. C. R. I. & P. No. 20. 3 Ar. Albert Lea..... 6 25 p. m. C. R. I. & P. No. 20. Dinner at Albert Lea.
Steele.....	Owatonna.....	30	C. R. I. & P. C. B. & Q. I. C. N. C. & St. L. C. of Ga.	Burlington St. Louis Mertin Chattanooga Lytle		4 Lv. Jackson..... 2 20 p. m. C. M. & St. P. No. 4. 5 Lv. Fairmont..... 3 25 p. m. C. M. & St. P. No. 4. 6 Ar. Albert Lea..... 5 52 p. m. C. M. & St. P. No. 4. Dinner at Albert Lea.
Frebora.....	Albert Lea.....	65	C. R. I. & P. C. B. & Q. I. C. N. C. & St. L. C. of Ga.	Burlington St. Louis Mertin Chattanooga Lytle		7 Lv. Austin..... 3 45 p. m. C. M. & St. P. No. 23. 8 Ar. Albert Lea..... 4 50 p. m. C. M. & St. P. No. 23. Dinner at Albert Lea.
Jackson.....	Jackson.....	30	C. M. & St. P. C. R. I. & P. C. B. & Q. I. C. N. C. & St. L. C. of Ga.	Albert Lea Burlington St. Louis Mertin Chattanooga Lytle		9 Lv. Albert Lea..... 7 00 p. m. C. R. I. & P. Special. October 23. 10 Ar. Cedar Rapids..... 1 30 a. m. C. R. I. & P. Special.
Martin.....	Fairmont.....	35	C. M. & St. P. C. R. I. & P. I. C. N. C. & St. L. C. of Ga.	Albert Lea Burlington St. Louis Mertin Chattanooga Lytle		October 22. 11 Lv. Pipestone..... 12 58 p. m. C. R. I. & P. No. 418. 12 Lv. Luverne..... 1 35 p. m. C. R. I. & P. No. 418. 13 Ar. Ellsworth..... 2 10 p. m. C. R. I. & P. No. 418. 14 Lv. Ellsworth..... 2 20 p. m. C. R. I. & P. No. 420. 15 Ar. Lake Park..... 3 45 p. m. C. R. I. & P. No. 420.
Mower.....	Austin.....	55	C. M. & St. P. C. R. I. & P. C. B. & Q. I. C. N. C. & St. L. C. of Ga.	Albert Lea Burlington St. Louis Mertin Chattanooga Lytle		16 Lv. Worthington..... 1 30 p. m. C. R. I. & P. No. 1064. 17 Ar. Lake Park..... 2 25 p. m. C. R. I. & P. No. 1064. 18 Lv. Lake Park..... 3 45 p. m. C. R. I. & P. No. 420. Dinner in diner.
Pipestone.....	Pipestone.....	25	C. R. I. & P. C. B. & Q. I. C. N. C. & St. L. C. of Ga.	Albert Lea Burlington St. Louis Mertin Chattanooga Lytle		19 Ar. Cedar Rapids..... 11 45 p. m. C. R. I. & P. No. 420. Special train starts from Albert Lea. See Lines 8 and 10.
Rock.....	Luverne.....	25	C. R. I. & P. C. B. & Q. I. C. N. C. & St. L. C. of Ga.	Burlington St. Louis Mertin Chattanooga Lytle		October 23. 20 Lv. Cedar Rapids..... 6 00 a. m. C. R. I. & P. Special. 21 Ar. Burlington..... 6 50 a. m. C. R. I. & P. Special. Breakfast at Burlington.
Nobles.....	Worthington.....	40	C. R. I. & P. C. B. & Q. I. C. N. C. & St. L. C. of Ga.	Burlington St. Louis Mertin Chattanooga Lytle		22 Lv. Burlington..... 7 00 a. m. C. B. & Q. Special. 23 Ar. Hannibal..... 11 20 a. m. C. B. & Q. Special. Luncheon en route.
						24 Lv. Hannibal..... 12 30 p. m. C. B. & Q. Special. 25 Ar. St. Louis..... 3 30 p. m. C. B. & Q. Special. 26 Lv. St. Louis..... 4 30 p. m. I. C. Special. Dinner en route.
						October 24. 27 Ar. Martin..... 12 00 midnight. I. C. Special. 28 Lv. Martin..... 12 15 a. m. N. C. & St. L. Special. Breakfast en route.
						29 Ar. Chattanooga..... 12 00 noon. N. C. & St. L. Special. Luncheon.
						30 Lv. Chattanooga..... 1 00 p. m. C. of Ga. Special. 31 Ar. Lytle..... 1 30 p. m. C. of Ga. Special.
Total..... 345						

THE ROAD TO FRANCE

TYPICAL DRAFT TRAIN SCHEDULE (Continued)

FROM MINNESOTA TO CAMP FORREST (LYTLE), GEORGIA.					
Routes and Schedules.					
Schedule No. 3.					
ENTRAIN OCTOBER 23, 1918.					
1 COUNTY	2 COUNTY SEAT OR HEADQUARTERS	3 No. of Men	4 ROUTE		6 TRAIN SCHEDULE
			ROAD	JUNCTION	
Lincoln	Ivanhoe	30	C. & N. W. C. C. C. & St. L. C. N. O. & T. P. Southern	Chicago Cincinnati Chattanooga Lytle	Meals will be provided as follows: Breakfast between 9:30 a.m. and 9:30 a.m. Luncheon between 11:30 a.m. and 1:30 p.m. Dinner between 5:30 p.m. and 8:00 p.m.
Lyon	Marshall	60	C. & N. W. C. C. C. & St. L. C. N. O. & T. P. Southern	Chicago Cincinnati Chattanooga Lytle	October 23. 1 Lv. Ivanhoe 9:05 a. m. C. & N. W. No. 40. 2 Ar. Tyler 10:50 a. m. C. & N. W. No. 40. Luncheon 3 Lv. Tyler 12:07 p. m. C. & N. W. No. 514. 4 Lv. Marshall 12:24 p. m. C. & N. W. No. 514. 5 Lv. New Ulm 3:39 p. m. C. & N. W. No. 514. 6 Ar. Mankato 4:35 p. m. C. & N. W. No. 514. Dinner
Brown	New Ulm	60	C. & N. W. C. C. C. & St. L. C. N. O. & T. P. Southern	Chicago Cincinnati Chattanooga Lytle	7 Lv. Slayton 12:33 p. m. C. St. P. M. & O. No. 72-4 8 Lv. Windom 3:42 p. m. C. St. P. M. & O. No. 4. 9 Lv. St. James 6:40 p. m. C. St. P. M. & O. No. 4. Dinner
Murray	Slayton	30	C. St. P. M. & O. C. & N. W. C. C. C. & St. L. C. N. O. & T. P. Southern	Mankato Chicago Cincinnati Chattanooga Lytle	10 Lv. Blue Earth 3:15 p. m. C. St. P. M. & O. No. 42-4. 11 Ar. Mankato 5:53 p. m. C. St. P. M. & O. No. 4. Dinner
Cottonwood	Windom	15	C. St. P. M. & O. C. & N. W. C. C. C. & St. L. C. N. O. & T. P. Southern	Mankato Chicago Cincinnati Chattanooga Lytle	12 Lv. St. Peter 4:20 p. m. C. & N. W. No. 24. 13 Ar. Mankato 5:10 p. m. C. & N. W. No. 24. Dinner
Watowan	St. James	20	C. St. P. M. & O. C. & N. W. C. C. C. & St. L. C. N. O. & T. P. Southern	Mankato Chicago Cincinnati Chattanooga Lytle	14 Lv. Mankato 6:35 p. m. C. & N. W. Special. 15 Lv. Waseca 7:40 p. m. C. & N. W. Special. 16 Lv. Watonwan 8:15 p. m. C. & N. W. Special. 17 Lv. Dodge Center 8:55 p. m. C. & N. W. Special. 18 Lv. Rochester 9:45 p. m. C. & N. W. Special. 19 Lv. Winona 11:50 p. m. C. & N. W. Special. Dinner
Farhault	Blue Earth	30	C. St. P. M. & O. C. & N. W. C. C. C. & St. L. C. N. O. & T. P. Southern	Mankato Chicago Cincinnati Chattanooga Lytle	20 Ar. Janesville 7:00 a. m. C. & N. W. Special. Breakfast 21 Lv. Janesville 7:45 a. m. C. & N. W. Special. 22 Ar. Chicago 10:30 a. m. C. & N. W. Special. 23 Lv. Chicago 12:00 noon. C. C. C. & St. L. Special. Luncheon and dinner en route
Nicolet	St. Peter	35	C. & N. W. C. C. C. & St. L. C. N. O. & T. P. Southern	Chicago Cincinnati Chattanooga Lytle	24 Ar. Cincinnati 10:00 p. m. C. C. C. & St. L. Special. 25 Lv. Cincinnati 11:00 p. m. C. N. O. & T. P. Special. Dinner
Blue Earth	Mankato	40	C. & N. W. C. C. C. & St. L. C. N. O. & T. P. Southern	Chicago Cincinnati Chattanooga Lytle	October 25. 26 Ar. Chattanooga 12:00 noon. C. N. O. & T. P. Special. Luncheon 27 Lv. Chattanooga 1:00 p. m. Southern Special. 28 Ar. Lytle 1:30 p. m. Southern Special.
Dodge (Entrain at Dodge Center)	Mantorville	30	C. & N. W. C. C. C. & St. L. C. N. O. & T. P. Southern	Chicago Cincinnati Chattanooga Lytle	
Olmstead	Rochester	60	C. & N. W. C. C. C. & St. L. C. N. O. & T. P. Southern	Chicago Cincinnati Chattanooga Lytle	
Winona	Winona	35	C. & N. W. C. C. C. & St. L. C. N. O. & T. P. Southern	Chicago Cincinnati Chattanooga Lytle	
	Total	445			

TYPICAL DRAFT TRAIN SCHEDULE (Continued)

FROM MINNESOTA TO CAMP FORREST (LYTLE), GEORGIA.						
Routes and Schedules.						
Schedule No. 6.						
ENTRAIN OCTOBER 23, 1918.						
1	2	3	4		5	
			ROUTE			
COUNTY	COUNTY SEAT OR HEADQUARTERS	No. of Mts	ROUTE		6	
			ROAD	JUNCTION		
Wilkin.....	Breckenridge.....	10	Gt. Nor	St. Paul	1 Lv. Breckenridge..... 9:25 a. m. G. N. No. 14.	
			C. R. I. & P.	Burlington		Lunch at Wilmar, G. N. R. restaurant.
			C. B. & Q.	St. Louis		2 Lv. Morris..... 11:25 a. m. G. N. No. 14.
			L. & N.	Nashville		Lunch at Wilmar, G. N. R. restaurant.
			N. C. & St. L.	Chattanooga		3 Lv. Benson..... 12:20 p. m. G. N. No. 14.
Cent. of Ga.	Lytte	Lunch before departure.				
Stevens.....	Morris.....	8	Gt. Nor	St. Paul	4 Ar. Wilmar..... 1:40 p. m. G. N. No. 14.	
			C. R. I. & P.	Burlington		(See Line 5.)
			C. B. & Q.	St. Louis		5 Lv. Wilmar..... 2:30 p. m. G. N. No. 14.
			L. & N.	Nashville		6 Lv. Litchfield..... 3:30 p. m. G. N. No. 14.
			N. C. & St. L.	Chattanooga		7 Ar. St. Paul..... 6:30 p. m. G. N. No. 14.
Cent. of Ga.	Lytte	Dinner at Sherman Hotel, St. Paul.				
Swift.....	Benson.....	40	Gt. Nor	St. Paul	8 Lv. St. Paul..... 8:30 p. m. C. R. I. & P. Special.	
			C. R. I. & P.	Burlington		9 Ar. Cedar Rapids..... 6:30 a. m. C. R. I. & P. Special.
			C. B. & Q.	St. Louis		Breakfast at Cedar Rapids.
			L. & N.	Chattanooga		10 Lv. Cedar Rapids..... 7:30 a. m. C. R. I. & P. Special.
			N. C. & St. L.	Lytte		11 Ar. Burlington..... 11:30 a. m. C. R. I. & P. Special.
Cent. of Ga.	Lytte	Lunch at Burlington.				
Kandiyohi.....	Wilmar.....	70	Gt. Nor	St. Paul	12 Lv. Burlington..... 12:30 p. m. C. B. & Q. Special.	
			C. R. I. & P.	Burlington		13 Ar. St. Louis..... 7:30 p. m. C. B. & Q. Special.
			C. B. & Q.	St. Louis		Dinner at St. Louis.
			L. & N.	Nashville		14 Lv. St. Louis..... 8:15 p. m. L. & N. Special.
			N. C. & St. L.	Chattanooga		Lunch en route.
Cent. of Ga.	Lytte	Breakfast en route.				
Meeker.....	Litchfield.....	60	Gt. Nor	St. Paul	15 Ar. Nashville..... 10:15 a. m. L. & N. Special.	
			C. R. I. & P.	Burlington		16 Lv. Nashville..... 11:45 a. m. N. C. & St. L. Special.
			C. B. & Q.	St. Louis		17 Ar. Chattanooga..... 3:45 p. m. C. & St. L. Special.
			L. & N.	Nashville		Dinner.
			N. C. & St. L.	Chattanooga		18 Lv. Chattanooga..... 6:45 p. m. C. of Ga. Special.
Cent. of Ga.	Lytte	19 Ar. Lytte..... 7:15 p. m. C. of Ga. Special.				
Total.....		188				
Schedule No. 7.						
ENTRAIN OCTOBER 23, 1918.						
Roseau.....	Roseau.....	30	G. N.	St. Paul	1 Lv. Roseau..... 12:47 p. m. G. N. No. 130.	
			C. B. & Q.	St. Louis		2 Ar. Crookston..... 5:35 p. m. G. N. No. 136.
			Ill. Cent.	Martin		Dinner at Crookston.
			N. C. & St. L.	Chattanooga		(See Line 13.)
			Cent. of Ga.	Lytte		
Pennington.....	Thiel River Falls.....	15	G. N.	St. Paul	3 Lv. Thiel River Falls..... 3:25 p. m. G. N. No. 136.	
			C. B. & Q.	St. Louis		4 Ar. Crookston..... 5:35 p. m. G. N. No. 136.
			Ill. Cent.	Martin		Dinner at Crookston.
			N. C. & St. L.	Chattanooga		(See Line 13.)
			Cent. of Ga.	Lytte		
Red Lake.....	Red Lake Falls.....	4	G. N.	St. Paul	5 Lv. Red Lake Falls..... 4:20 p. m. G. N. No. 136.	
			C. B. & Q.	St. Louis		6 Ar. Crookston..... 5:35 p. m. G. N. No. 136.
			Ill. Cent.	Martin		Dinner at Crookston.
			N. C. & St. L.	Chattanooga		(See Line 13.)
			Cent. of Ga.	Lytte		
Clearwater.....	Bagley.....	10	G. N.	St. Paul	7 Lv. Bagley..... 4:17 p. m. G. N. No. 33.	
			C. B. & Q.	St. Louis		8 Ar. Crookston..... 6:25 p. m. G. N. No. 33.
			Ill. Cent.	Martin		Dinner at Crookston.
			N. C. & St. L.	Chattanooga		(See Line 13.)
			Cent. of Ga.	Lytte		
Kittson.....	Hallock.....	35	G. N.	St. Paul	9 Lv. Hallock..... 3:32 p. m. G. N. No. 132.	
			C. B. & Q.	St. Louis		10 Ar. Crookston..... 6:05 p. m. G. N. No. 132.
			Ill. Cent.	Martin		Dinner at Crookston.
			N. C. & St. L.	Chattanooga		(See Line 13.)
			Cent. of Ga.	Lytte		
Marshall.....	Warren.....	60	G. N.	St. Paul	11 Lv. Warren..... 5:00 p. m. G. N. No. 132.	
			C. B. & Q.	St. Louis		12 Ar. Crookston..... 0:05 p. m. G. N. No. 132.
			Ill. Cent.	Martin		Dinner at Crookston.
			N. C. & St. L.	Chattanooga		(See Line 13.)
			Cent. of Ga.	Lytte		
Polk.....	Crookston.....	45	Gt. Nor	St. Paul	13 Lv. Crookston..... 10:20 p. m. G. N. No. 8.	
			C. B. & Q.	St. Louis		14 Lv. Ada..... 11:30 p. m. G. N. No. 8.
			Ill. Cent.	Martin		Breakfast at Sherman Hotel, St. Paul.
			N. C. & St. L.	Chattanooga		15 Ar. St. Paul..... 8:05 a. m. G. N. No. 8.
			Cent. of Ga.	Lytte		Luncheon and dinner in dining car en route.
Norman.....	Ada.....	50	Gt. Nor	St. Paul	16 Lv. St. Paul..... 8:30 p. m. C. B. & Q. Special.	
			C. B. & Q.	St. Louis		17 Ar. St. Louis..... 1:00 a. m. C. B. & Q. Special.
			Ill. Cent.	Martin		Breakfast at St. Louis.
			N. C. & St. L.	Chattanooga		18 Lv. St. Louis..... 3:20 a. m. C. & St. L. Special.
			Cent. of Ga.	Lytte		Luncheon en route.
Total.....		249	G. N.	St. Paul	19 Ar. Martin..... 4:00 p. m. L. C. Special.	
			C. B. & Q.	St. Louis		20 Lv. Martin..... 4:15 p. m. N. C. & St. L. Special.
			Ill. Cent.	Martin		Dinner en route.
			N. C. & St. L.	Chattanooga		21 Ar. Chattanooga..... 4:15 a. m. N. C. & St. L. Special.
			Cent. of Ga.	Lytte		22 Lv. Chattanooga..... 4:45 a. m. C. of Ga. Special.
					23 Ar. Lytte..... 5:15 a. m. C. of Ga. Special.	

TYPICAL DRAFT TRAIN SCHEDULE (Continued)

FROM MINNESOTA TO CAMP FORREST (LYTLE), GEORGIA.

Routes and Schedules.

Schedule No. 8.

ENTRAIN OCTOBER 24, 1918.

1	2	3	4		5	6
			ROUTE			
			ROAD	JUNCTION		
COUNTY	COUNTY SEAT OR HEADQUARTERS	No. of Mica				TRAIN SCHEDULE
Meals will be provided as follows: Breakfast between 6:30 a.m. and 9:30 a.m. Luncheon between 11:30 a.m. and 1:30 p.m. Dinner between 5:30 p.m. and 8:00 p.m.						
Isanti.....	Cambridge.....	45	Gt. Nor. C. B. & Q. Ill. Cent. N. C. & St. L. Cent. of Ga.	St. Paul..... St. Louis..... Martin..... Chattanooga..... Lytle.....		<p>October 24.</p> 1 Lv. Cambridge..... 4:00 a.m., Gt. Nor. ....No. 17. 2 Ar. St. Paul..... 6:30 a.m., Gt. Nor. ....No. 17. Breakfast at Sherman Hotel, St. Paul. 3 Lv. St. Paul..... 9:00 a.m., C. B. & Q. ....Special. Luncheon and dinner in dining cars en route.
Ramsey.....	St. Paul: City Board 1..... City Board 2..... City Board 3..... City Board 4..... City Board 5..... City Board 6..... City Board 7..... City Board 8..... City Board 9..... City Board 11..... Total.....	10 25 10 10 20 7 10 8 5 6 156	C. B. & Q. Ill. Cent. N. C. & St. L. Cent. of Ga.	St. Louis..... Martin..... Chattanooga..... Lytle.....		<p>October 25.</p> 4 Ar. St. Louis..... 7:30 a.m., C. B. & Q. ....Special. Breakfast at St. Louis. 5 Lv. St. Louis..... 8:30 a.m., I. C. ....Special. Luncheon en route. 6 Ar. Martin..... 4:00 p.m., I. C. ....Special. 7 Lv. Martin..... 4:15 p.m., N. C. & St. L. ....Special. Dinner en route.
<p>October 26.</p> 8 Ar. Chattanooga..... 4:15 a.m., N. C. & St. L. ....Special. 9 Lv. Chattanooga..... 4:45 a.m., C. of Ga. ....Special. 10 Ar. Lytle..... 5:15 a.m., C. of Ga. ....Special.						

Schedule No. 9.

ENTRAIN OCTOBER 24, 1918.

St. Louis.....	Hibbing (County Bd. 6)	4	D. M. & N. M. St. P. & S. S. M. Penna. Line..... C. N. O. & T. P. C. of Ga.	Duluth..... Chicago..... Cincinnati..... Chattanooga..... Lytle.....		<p>October 24.</p> 1 Lv. Hibbing..... 12:01 p.m., D. M. & N. ....No. 4. 2 Lv. Virginia..... 12:06 p.m., D. M. & N. ....No. 4. 3 Lv. Eveleth..... 12:30 p.m., D. M. & N. ....No. 4. 4 Lv. Chisholm..... 11:48 a.m., D. M. & N. ....No. 4.
St. Louis.....	Virginia (County Bd. 4)	20	D. M. & N. M. St. P. & S. S. M. Penna. Line..... C. N. O. & T. P. C. of Ga.	Duluth..... Chicago..... Cincinnati..... Chattanooga..... Lytle.....		5 Ar. Duluth..... 3:21 p.m., D. M. & N. ....No. 4. Dinner at Duluth.
St. Louis.....	Eveleth (County Bd. 2)	30	D. M. & N. M. St. P. & S. S. M. Penna. Line..... C. N. O. & T. P. C. of Ga.	Duluth..... Chicago..... Cincinnati..... Chattanooga..... Lytle.....		<p>October 25.</p> 6 Lv. Duluth..... 6:30 p.m., M. St. P. & S. S. M. ....No. 18. Breakfast in diner.
St. Louis.....	Chisholm (County Bd. 5)	2	D. M. & N. M. St. P. & S. S. M. Penna. Line..... C. N. O. & T. P. C. of Ga.	Duluth..... Chicago..... Cincinnati..... Chattanooga..... Lytle.....		<p>October 26.</p> 7 Ar. Chicago..... 9:25 a.m., M. St. P. & S. S. M. ....No. 18. 8 Lv. Chicago..... 9:30 a.m., Penna. Line.....No. 216. Luncheon en route. 9 Ar. Cincinnati..... 6:00 p.m., Penna. Line.....No. 216. Dinner.
St. Louis.....	Duluth: City Board 1..... City Board 2..... Total.....	20 20 96	D. M. & N. M. St. P. & S. S. M. Penna. Line..... C. N. O. & T. P. C. of Ga.	Duluth..... Chicago..... Cincinnati..... Chattanooga..... Lytle.....		<p>October 26.</p> 10 Lv. Cincinnati..... 8:10 p.m., C. N. O. & T. P. ....No. 9. 11 Ar. Chattanooga..... 7:20 a.m., C. N. O. & T. P. ....No. 9. Breakfast. 12 Lv. Chattanooga..... 8:30 a.m., C. of Ga. ....Special. 13 Ar. Lytle..... 9:00 a.m., C. of Ga. ....Special.

TYPICAL DRAFT TRAIN SCHEDULE (Continued)

FROM MINNESOTA TO CAMP FORREST' (LYTLE), GEORGIA.

Routes and Schedules.

Schedule No. 10.

ENTRAIN OCTOBER 23-24, 1918.

1 COUNTY	2 COUNTY SEAT OR HEADQUARTERS	3 No. of Miles	4 ROUTE		6 TRAIN SCHEDULE
			ROAD	JUNCTION	
Meals will be provided as follows: Breakfast between 6:30 a.m. and 8:30 a.m. Luncheon between 11:30 a.m. and 1:30 p.m. Dinner between 6:30 p.m. and 8:00 p.m.					
Traverse	Wheaton	18	C. M. & St. P. Penna. Lines Sou. R. R. C. N. O. & T. P. C. of Ga.	Chicago Louisville Danville Chattanooga Lytle	<p>October 23.</p> <p>1 Lv. Wheaton 9:44 p. m., C. M. & St. P. No. 408. 2 Ar. Ortonville 11:40 p. m., C. M. & St. P. No. 408. Lodging at Ortonville.</p> <p>October 24.</p> <p>Breakfast at Ortonville.</p> <p>3 Lv. Ortonville 8:54 a. m., C. M. & St. P. No. 4. 4 Lv. Montevideo 8:35 a. m., C. M. & St. P. No. 4. 5 Lv. Granite Falls 9:04 a. m., C. M. & St. P. No. 4. 6 Lv. Olivia 10:04 a. m., C. M. & St. P. No. 4. 7 Lv. Glencoe 11:40 a. m., C. M. & St. P. No. 4. Luncheon in diner.</p> <p>8 Ar. Minneapolis 2:00 p. m., C. M. & St. P. No. 4. 9 Lv. Minneapolis 2:20 p. m., C. M. & St. P. Special.</p> <p>10 Lv. Le Sueur Center 11:16 a. m., C. M. & St. P. No. 41. Luncheon at Farmington.</p> <p>11 Ar. St. Paul 2:00 p. m., C. M. & St. P. No. 21. 12 Lv. St. Paul 3:00 p. m., C. M. & St. P. Special. 13 Lv. Hastings 4:25 p. m., C. M. & St. P. Special. 14 Lv. Red Wing 4:57 p. m., C. M. & St. P. Special. 15 Lv. Wabasha 5:45 p. m., C. M. & St. P. Special. Dinner in diner.</p> <p>16 Ar. Le Crosse 7:20 p. m., C. M. & St. P. Special. (See Line 20).</p>
Big Stone	Ortonville	10	C. M. & St. P. Penna. Lines Sou. R. R. C. N. O. & T. P. C. of Ga.	Chicago Louisville Danville Chattanooga Lytle	<p>October 24.</p> <p>17 Lv. Preston 7:00 a. m., C. M. & St. P. No. 434. 18 Lv. Caledonia 9:05 a. m., C. M. & St. P. No. 434. 19 Ar. La Crosse 10:59 a. m., C. N. O. & T. P. No. 3. Luncheon and dinner at La Crosse.</p> <p>20 Lv. La Crosse 7:20 p. m., C. M. & St. P. Special.</p> <p>October 24.</p> <p>21 Ar. Chicago 4:50 a. m., C. M. & St. P. Special. 22 Lv. Chicago 6:50 a. m., Penna. Lines Special. Breakfast and luncheon en route.</p> <p>23 Ar. Louisville 4:00 p. m., Penna. Lines Special. Dinner at Louisville.</p> <p>24 Lv. Louisville 6:00 p. m., Sou. R. R. Special. 25 Ar. Danville 6:50 p. m., Sou. R. R. Special. 26 Lv. Danville 10:30 p. m., C. N. O. & T. P. Special.</p> <p>October 25.</p> <p>27 Ar. Chattanooga 7:20 a. m., N. C. & St. L. Special. Breakfast at Chattanooga.</p> <p>28 Lv. Chattanooga 8:50 a. m., C. of Ga. Special. 29 Ar. Lytle 9:00 a. m., C. of Ga. Special.</p>
Chippewa	Montevideo	18	C. M. & St. P. Penna. Lines Sou. R. R. C. N. O. & T. P. C. of Ga.	Chicago Louisville Danville Chattanooga Lytle	
Yellow Medicine	Granite Falls	50	C. M. & St. P. Penna. Lines Sou. R. R. C. N. O. & T. P. C. of Ga.	Chicago Louisville Danville Chattanooga Lytle	
McLeod	Glencoe	45	C. M. & St. P. Penna. Lines Sou. R. R. C. N. O. & T. P. C. of Ga.	Chicago Louisville Danville Chattanooga Lytle	
Renville	Olivia	50	C. M. & St. P. Penna. Lines Sou. R. R. C. N. O. & T. P. C. of Ga.	Chicago Louisville Danville Chattanooga Lytle	
Le Sueur	Le Sueur Center	25	C. M. & St. P. Penna. Lines Sou. R. R. C. N. O. & T. P. C. of Ga.	Chicago Louisville Danville Chattanooga Lytle	
Dakota	Hastings	30	C. M. & St. P. Penna. Lines Sou. R. R. C. N. O. & T. P. C. of Ga.	Chicago Louisville Danville Chattanooga Lytle	
Goodhue	Red Wing	85	C. M. & St. P. Penna. Lines Sou. R. R. C. N. O. & T. P. C. of Ga.	Chicago Louisville Danville Chattanooga Lytle	
Wabasha	Wabasha	40	C. M. & St. P. Penna. Lines Sou. R. R. C. N. O. & T. P. C. of Ga.	Chicago Louisville Danville Chattanooga Lytle	
Houston	Caledonia	18	C. M. & St. P. Penna. Lines Sou. R. R. C. N. O. & T. P. C. of Ga.	Chicago Louisville Danville Chattanooga Lytle	
Filmore	Preston	65	C. M. & St. P. Penna. Lines Sou. R. R. C. N. O. & T. P. C. of Ga.	Chicago Louisville Danville Chattanooga Lytle	
	Total	454			

TYPICAL DRAFT TRAIN SCHEDULE (Continued)

FROM MINNESOTA TO CAMP FORREST (LYTLE), GEORGIA.

Routes and Schedules.

Schedule No. 11.

ENTRAIN OCTOBER 23-24, 1918.

1	2	3	4		6
			ROUTE		
COUNTY	COUNTY SEAT OR HEADQUARTERS	No. of Mco	ROAD	JUNCTION	TRAIN SCHEDULE
Meals will be provided as follows: Breakfast between 6:30 a.m. and 8:30 a.m. Luncheon between 11:30 a.m. and 1:30 p.m. Dinner between 5:30 p.m. and 8:00 p.m.					
Graet.....	Elbow Lake.....	10	M.S.P. & S.S.M. C. R. I. & P. C. B. & Q. Ill. Cent. N. C. & St. L. C. of Ga.	St. Paul Burlington St. Louis Martin Chattanooga Lytle.	October 24. 1 Lv. Elbow Lake..... 1:32 p. m. M S P & S S M No. 108. 2 Ar. St. Paul..... 6:09 p. m. M S P & S S M No. 108. Dinner at St. Paul. 3 Lv. Mahanomen..... 8:05 a. m. M S P & S S M No. 112. 4 Lv. Henning..... 10:43 a. m. M S P & S S M No. 112. Luncheon en route.
Mahanomen.....	Mahanoece.....	6	M.S.P. & S.S.M. C. R. I. & P. C. B. & Q. Ill. Cent. N. C. & St. L. C. of Ga.	St. Paul Burlington St. Louis Martin Chattanooga Lytle.	5 Lv. Glenwood..... 12:45 p. m. M S P & S S M No. 112. 6 Lv. Buffalo..... 3:49 p. m. M S P & S S M No. 112. 7 Ar. St. Paul..... 6:30 p. m. M S P & S S M No. 112. Dinner at St. Paul.
Otterdal.....	Henning (Board No. 2.)	55	M.S.P. & S.S.M. C. R. I. & P. C. B. & Q. Ill. Cent. N. C. & St. L. C. of Ga.	St. Paul Burlington St. Louis Martin Chattanooga Lytle.	8 Lv. Carlton..... 3:08 p. m. N. P..... No. 63. 9 Lv. Pine City..... 4:48 p. m. N. P..... No. 63. 10 Ar. St. Paul..... 6:10 p. m. N. P..... No. 63. Dinner at Sherman Hotel.
Pope.....	Glenwood.....	20	M.S.P. & S.S.M. C. R. I. & P. C. B. & Q. Ill. Cent. N. C. & St. L. C. of Ga.	St. Paul Burlington St. Louis Martin Chattanooga Lytle.	11 Lv. Center City..... 12:45 p. m. N. P..... No. 91. 12 Ar. St. Paul..... 2:50 p. m. N. P..... No. 91. Lunch and dinner at Sherman Hotel.
Wright.....	Buffalo.....	50	M.S.P. & S.S.M. C. R. I. & P. C. B. & Q. Ill. Cent. N. C. & St. L. C. of Ga.	St. Paul Burlington St. Louis Martin Chattanooga Lytle.	13 Lv. White Bear..... 5:25 p. m. N. P..... No. 79. 14 Ar. St. Paul..... 5:55 p. m. N. P..... No. 79. Dinner at Sherman Hotel.
Carlton.....	Carlton.....	18	M.S.P. & S.S.M. C. R. I. & P. C. B. & Q. Ill. Cent. N. C. & St. L. C. of Ga.	St. Paul Burlington St. Louis Martin Chattanooga Lytle.	15 Lv. Little Falls..... 2:30 p. m. N. P..... No. 10. 16 Lv. St. Cloud..... 3:34 p. m. N. P..... No. 10. 17 Lv. Anoka..... 5:02 p. m. N. P..... No. 10. 18 Ar. St. Paul..... 6:20 p. m. N. P..... No. 10. Dinner at Sherman Hotel.
Pine.....	Pine City.....	55	N. P. C. R. I. & P. C. B. & Q. Ill. Cent. N. C. & St. L. C. of Ga.	St. Paul Burlington St. Louis Martin Chattanooga Lytle.	19 Lv. International Falls..... 6:45 p. m. M & I..... No. 24. Box breakfast at Becker. October 24. 20 Ar. St. Paul..... 10:20 a. m. M & I..... No. 12. Lunch and dinner at Sherman Hotel.
Chisago.....	Center City.....	10	N. P. C. R. I. & P. C. B. & Q. Ill. Cent. N. C. & St. L. C. of Ga.	St. Paul Burlington St. Louis Martin Chattanooga Lytle.	21 Lv. St. Paul..... 8:30 p. m. C. R. I. & P..... Special. October 25. 22 Ar. Cedar Rapids..... 6:30 a. m. C. R. I. & P..... Special. Breakfast at Cedar Rapids. 23 Lv. Cedar Rapids..... 7:30 a. m. C. R. I. & P..... Special. 24 Ar. Burlington..... 11:30 a. m. C. R. I. & P..... Special. Luncheon at Burlington.
Ramsey.....	White Bear.....	8	N. P. C. R. I. & P. C. B. & Q. Ill. Cent. N. C. & St. L. C. of Ga.	St. Paul Burlington St. Louis Martin Chattanooga Lytle.	25 Lv. Burlington..... 12:30 p. m. C. B. & Q..... Special. 26 Ar. St. Louis..... 8:49 p. m. C. B. & Q..... Special. Dinner at St. Louis.
Morrisoo.....	Little Falls.....	75	N. P. C. R. I. & P. C. B. & Q. Ill. Cent. N. C. & St. L. C. of Ga.	St. Paul Burlington St. Louis Martin Chattanooga Lytle.	27 Lv. St. Louis..... 9:40 p. m. I. C..... Special. October 26. 28 Ar. Martin..... 5:00 a. m. I. C..... Special. 29 Lv. Martin..... 5:15 a. m. N. C. & St. L..... Special. Breakfast and luncheon en route.
Stearns.....	St. Cloud.....	80	N. P. C. R. I. & P. C. B. & Q. Ill. Cent. N. C. & St. L. C. of Ga.	St. Paul Burlington St. Louis Martin Chattanooga Lytle.	30 Ar. Chattanooga..... 4:45 p. m. N. C. & St. L..... Special. 31 Lv. Chattanooga..... 5:15 p. m. C. of Ga..... Special. 32 Ar. Lytle..... 5:45 p. m. C. of Ga..... Special.
Anoka.....	Anoka.....	24	N. P. C. R. I. & P. C. B. & Q. Ill. Cent. N. C. & St. L. C. of Ga.	St. Paul Burlington St. Louis Martin Chattanooga Lytle.	
Koochiching.....	International Falls.....	18	M. & I. N. P. C. R. I. & P. C. B. & Q. Ill. Cent. N. C. & St. L. C. of Ga.	Brainerd St. Paul Burlington St. Louis Martin Chattanooga Lytle.	
Total.....		429			

TYPICAL DRAFT TRAIN SCHEDULE (Continued)

FROM MINNESOTA TO CAMP FORREST (LYTLE), GEORGIA.					
Routes and Schedules.					
Schedule No. 12.					
ENTRAIN OCTOBER 25, 1918.					
1	2	3	4		5
			ROUTE		
COUNTY	COUNTY SEAT OR HEADQUARTERS	No. of Mils	ROAD		JUNCTION
			TRAIN SCHEDULE		
Meals will be provided as follows: Breakfast between 6:30 a.m. and 9:30 a.m. Luncheon between 11:30 a.m. and 1:30 p.m. Dinner between 5:30 p.m. and 8:00 p.m.					
Clay	Moorehead	40	Nor. Pac. C. & N. W. C. C. & St. L. C. N. O. & T. P. Southern	St. Paul Chicago Cincinnati Chattanooga Lytle	October 25. 1 Lv. Moorehead 9:05 a. m., Nor. Pac. No. 10. 2 Lv. Detroit 10:48 a. m., Nor. Pac. No. 10. 3 Lv. Wadena 12:11 p. m., Nor. Pac. No. 10.
Becker	Detroit	40	Nor. Pac. C. & N. W. C. C. & St. L. C. N. O. & T. P. Southern	St. Paul Chicago Cincinnati Chattanooga Lytle	4 Lv. Bemidj 7:35 a. m., M. & I. No. 32. 5 Lv. Walker 8:45 a. m., M. & I. No. 32. 6 Ar. Brainerd 11:05 a. m., M. & I. No. 32. Lunch at Brainerd.
Wadena	Wadena	18	Nor. Pac. C. & N. W. C. C. & St. L. C. N. O. & T. P. Southern	St. Paul Chicago Cincinnati Chattanooga Lytle	7 Lv. Aitkeo 10:17 a. m., Nor. Pac. No. 55. 8 Ar. Brainerd 11:15 a. m., Nor. Pac. No. 55. Lunch at Brainerd.
Beltrami	Bemidj	50	M. & I. Nor. Pac. C. & N. W. C. C. & St. L. C. N. O. & T. P. Southern	Brainerd St. Paul Chicago Cincinnati Chattanooga Lytle	9 Lv. Brainerd 12:50 p. m., Nor. Pac. No. 32. 10 Ar. St. Paul 6:20 p. m., Nor. Pac. No. 10. Dinner at Sherman Hotel.
Cass	Walker	24	M. & I. Nor. Pac. C. & N. W. C. C. & St. L. C. N. O. & T. P. Southern	Brainerd St. Paul Chicago Cincinnati Chattanooga Lytle	11 Lv. Minneapolis 7:00 p. m., C. St. P. M. & O. Special. 12 Ar. St. Paul 7:55 p. m., C. St. P. M. & O. Special. 15 Lv. St. Paul 7:45 p. m., C. St. P. M. & O. Special. 16 Ar. Hudson 8:32 p. m., C. St. P. M. & O. Special.
Aitkin	Aitkin	21	Nor. Pac. C. & N. W. C. C. & St. L. C. N. O. & T. P. Southern	St. Paul Chicago Cincinnati Chattanooga Lytle	17 Lv. Stillwater 7:30 p. m., C. St. P. M. & O. Special. 18 Ar. Hudson 7:50 p. m., C. St. P. M. & O. Special. 19 Lv. Hudson 8:32 p. m., C. St. P. M. & O. Special.
Crow Wing	Brainerd	40	Nor. Pac. C. & N. W. C. C. & St. L. C. N. O. & T. P. Southern	St. Paul Chicago Cincinnati Chattanooga Lytle	20 Ar. Eloy 2:10 a. m., C. St. P. M. & O. Special. 21 Lv. Eloy 2:15 a. m., C. & N. W. Special. 22 Ar. Janesville 6:00 a. m., C. & N. W. Special.
Hennepin	Minneapolis City Board 7 City Board 8 City Board 11 City Board 12 City Board 13	25 25 19 24 2	C. St. P. M. & O. C. & N. W. C. C. & St. L. C. N. O. & T. P. Southern	Eloy or Wyeville Chicago Cincinnati Chattanooga Lytle	23 Lv. Janesville 7:00 a. m., C. & N. W. Special. 24 Ar. Chicago 10:00 a. m., C. & N. W. Special.
Scott	Shakopee	40	C. St. P. M. & O. C. & N. W. C. C. & St. L. C. N. O. & T. P. Southern	Eloy or Wyeville Chicago Cincinnati Chattanooga Lytle	25 Lv. Ely 1:20 p. m., D. & I. R. No. 4. 26 Ar. Duluth 5:45 p. m., D. & I. R. No. 4. Dinner on diner leaving Duluth.
Washington	Stillwater	35	C. St. P. M. & O. C. & N. W. C. C. & St. L. C. N. O. & T. P. Southern	Eloy or Wyeville Chicago Cincinnati Chattanooga Lytle	27 Lv. Duluth 6:05 p. m., C. St. P. M. & O. No. 93. 28 Ar. Superior 6:25 p. m., C. St. P. M. & O. No. 93.
St. Louis	Ely (County Bd. 3)	10	D. & I. R. C. St. P. M. & O. C. & N. W. C. C. & St. L. C. N. O. & T. P. Southern	Duluth Eloy Chicago Cincinnati Chattanooga Lytle	29 Lv. Grand Rapids 2:36 p. m., Gt. Nor. No. 34. 30 Ar. Superior 6:00 p. m., Gt. Nor. No. 34. Dinner in diner.
St. Louis	Duluth (R. F. D. No. 1)	30	D. & I. R. C. St. P. M. & O. C. & N. W. C. C. & St. L. C. N. O. & T. P. Southern	Duluth Eloy Chicago Cincinnati Chattanooga Lytle	31 Lv. Superior 6:25 p. m., C. St. P. M. & O. No. 93. Breakfast in diner.
St. Louis	Duluth City Board 3 City Board 4	19 4	D. & I. R. C. St. P. M. & O. C. & N. W. C. C. & St. L. C. N. O. & T. P. Southern	Duluth Eloy Chicago Cincinnati Chattanooga Lytle	32 Ar. Chicago 9:05 a. m., C. & N. W. No. 512. 33 Lv. Chicago 11:30 a. m., C. C. & St. L. Special. Luncheon and dinner en route.
Itasca	Grand Rapids	35	Gt. Nor. C. St. P. M. & O. C. & N. W. C. C. & St. L. C. N. O. & T. P. Southern	Superior Eloy Chicago Cincinnati Chattanooga Lytle	34 Ar. Cincinnati 9:30 p. m., C. C. & St. L. Special. 35 Lv. Cincinnati 10:30 p. m., C. N. O. & T. P. Special.
Total		494			

APPENDIX C

WAR DEPARTMENT PROPERTY SHIPPED OVERSEAS BY MONTH AND PORT

<i>Month</i>	<i>New York Tons</i>	<i>Philadelphia Tons</i>	<i>Baltimore Tons</i>	<i>Hampton Roads Tons</i>	<i>Other Ports Tons</i>	<i>Total Tons</i>
June 1, 1917, to December 31, 1917						
June	15,848 100%					15,848 3.5%
July	11,831 100%					11,831 2.5%
August	19,390 100%					19,390 4%
September	48,197 92%			378 1%	4,005 7%	52,580 11%
October	50,408 46%	20,112 18%		19,858 18%	20,330 18%	110,708 24%
November	25,559 33%	9,452 12%	663 1%	30,251 39%	11,018 15%	76,943 17%
December	91,751 52%	13,782 8%	7,152 4%	41,819 23%	23,400 13%	177,904 38%
Total, 1917	262,984 56%	43,346 9%	7,815 2%	92,306 20%	58,753 13%	465,204 100%
January 1, 1918, to December 31, 1918						
January	66,739 56%	7,188 6%	5,901 5%	24,322 20%	14,602 13%	118,752 2%
February	141,802 60%	16,137 7%	25,948 11%	40,639 18%	8,791 4%	233,317 4%
March	139,610 48%	35,308 12%	16,432 6%	85,217 30%	12,180 4%	288,747 5%
April	187,551 51%	27,150 7%	54,206 15%	74,810 20%	26,499 7%	370,216 6%
May	161,955 36%	46,549 10%	58,073 13%	143,603 32%	39,787 9%	449,967 8%
June	236,976 56%	24,604 6%	42,504 10%	105,273 25%	13,669 3%	423,026 7%

THE ROAD TO FRANCE

WAR DEPARTMENT PROPERTY SHIPPED OVERSEAS (Continued)

<i>Month</i>	<i>New York Tons</i>	<i>Philadelphia Tons</i>	<i>Baltimore Tons</i>	<i>Hampton Roads Tons</i>	<i>Other Ports Tons</i>	<i>Total Tons</i>
January 1, 1918, to December 31, 1918 (continued)						
July	230,094 43%	55,679 10%	56,088 11%	129,285 24%	60,223 12%	531,369 9%
August	285,319 49%	46,961 8%	88,543 15%	126,131 22%	33,288 6%	580,242 10%
September	386,710 57%	43,501 6%	58,224 9%	145,577 22%	41,950 6%	675,962 12%
October	371,431 50%	82,616 11%	80,225 10%	161,489 22%	52,084 7%	747,845 13%
November	479,047 59%	64,274 8%	68,882 9%	163,117 20%	34,454 4%	809,774 14%
December	230,116 40%	45,003 8%	54,875 9%	78,300 13%	174,861 30%	583,155 10%
Total, 1918	2,917,350 50%	494,970 9%	609,901 10%	1,277,763 22%	512,388 9%	5,812,372 100%

APPENDIX D
 FREIGHT AND EXPRESS TRAFFIC
 Camp Grant, Rockford, Illinois
Freight Traffic

<i>Inbound</i>	<i>Number Carloads</i>	<i>Tons Carloads</i>	<i>Tons Less than Carloads</i>
September, 1917	1,023	20,422.4	394.5
October	1,580	43,114.5	323.1
November	1,403	50,827.1	332.3
December	920	31,102.9	188.1
January, 1918	674	15,821.3	141.8
February	779	24,275.8	145.8
March	1,094	36,558.6	209.1
April	1,299	29,195.7	234.3
May	582	7,845.7	298.7
June	309	4,895.8	230.7
July	584	17,914.3	238.8
August	810	32,371.4	288.2
September	1,749	43,871.7	557.2
October	1,305	37,595.6	1,679.5
November	1,402	36,402.4	341.6
December	760	24,577.8	237.6
Total	16,273	456,793.0	5,841.3
Average per car		28.07 tons	
<i>Outbound</i>			
September, 1917	10	141.3	6.2
October	34	487.1	7.2
November	87	1,029.1	17.2
December	201	2,621.2	43.9
January, 1918	126	1,659	30
February	96	915	20.5
March	198	11,998.8	7.5
April	201	2,085.7	14.3
May	252	2,847.9	10.1
June	116	3,389.2	18.9
July	54	596.5	35.1
August	64	1,249.8	89.1
September	47	1,478.5	45
October	173	1,541.9	35.5
November	157	1,416	74.6
December	92	1,486.6	69
Total	1,908	24,945.6	524.1
Average per car		13.07 tons*	

* The greater number of cars out of this camp contained tin cans, wagons, construction equipment, and motor vehicles, this lading making it impossible to load to the weight-carrying capacity of the cars.

THE ROAD TO FRANCE

FREIGHT AND EXPRESS TRAFFIC (*Continued*)*Express Traffic*

	<i>Number Carloads</i>	<i>Tons Carloads</i>	<i>Tons Less than Carloads</i>
Inbound	11	90	170
Outbound	7	76.5	279.51

APPENDIX E

TROOP SAILINGS FROM NEW YORK FROM JULY 1, 1918, TO DATE OF ARMISTICE

<i>Name of ship</i>	<i>Strength</i>				<i>Total</i>
	<i>Officers</i>	<i>Men</i>	<i>Nurses</i>	<i>Civilians</i>	
Sailed July 5.					
<i>Rochambeau</i>	15	720	...	..	735
<i>Kilpatrick</i> (Canal Zone)	15	927	...	31	973
<i>Aquitania</i>	335	5,662	149	6	6,152
Sailed July 6.					
<i>Princess Juliana</i>	39	1,397	...	..	1,436
<i>Empress of Russia</i>	150	2,822	...	1	2,973
<i>Scotian</i>	106	2,252	...	..	2,358
<i>Armagh</i>	49	2,008	...	..	2,057
<i>Karoo</i>	43	1,533	...	..	1,576
<i>Kashmir</i>	61	2,021	...	..	2,082
<i>Victorian</i>	10	461	...	..	471
<i>Cedric</i>	110	3,687	...	..	3,797
<i>Briton</i>	124	1,808	...	..	1,932
<i>Ulysses</i>	105	2,777	...	..	2,882
<i>Ceramic</i>	93	3,183	...	..	3,276
<i>Belgie</i>	112	4,744	...	..	4,856
<i>Louisville</i>	119	2,366	...	..	2,485
Sailed July 7.					
<i>Desna</i>	112	1,994	...	..	2,106
<i>Darro</i>	71	1,681	...	..	1,752
<i>Benalla</i>	47	1,759	...	..	1,806
Sailed July 8.					
<i>Leviathan</i>	446	10,095	...	..	10,542
Sailed July 9.					
<i>La France</i>	134	4,392	...	3	4,529
<i>Agamemnon</i>	208	4,222	...	..	4,430
<i>Mt. Vernon</i>	119	4,439	...	..	4,558
<i>America</i>	186	5,098	...	..	5,284
<i>Orizaba</i>	69	3,038	...	..	3,107
Sailed July 10.					
<i>Toloa</i>	42	1,133	...	..	1,175
<i>Lutetia</i>	65	1,905	...	..	1,970
<i>Sierra</i>	60	1,652	...	..	1,712
<i>Manchuria</i>	144	3,371	...	1	3,516
<i>Narragansett</i>	5	213	...	..	218
Sailed July 11.					
<i>Durham Castle</i>	82	2,019	100	6	2,207
Sailed July 12.					
<i>Olympic</i>	200	5,948	207	11	6,366

THE ROAD TO FRANCE
TROOP SAILINGS FROM NEW YORK (*Continued*)

Name of ship	Officers	Men	Strength		Total
			Nurses	Civilians	
Sailed July 14.					
<i>Baltic</i>	302	2,933	100	2	3,337
<i>Khiva</i>	42	1,510	...	..	1,552
<i>Pyrrhus</i>	25	1,253	...	..	1,278
<i>Alsatian</i>	20	697	...	..	717
<i>Zeelandia</i>	37	1,566	...	..	1,603
<i>Karmala</i>	61	1,995	...	..	2,056
<i>Empress of Britain</i>	111	3,982	...	..	4,093
<i>Katoomba</i>	98	1,883	...	..	1,981
<i>Khyber</i>	76	2,190	...	..	2,266
<i>Adriatic</i>	151	2,567	...	..	2,718
<i>Dunvegan Castle</i>	39	1,261	...	..	1,300
<i>Caronia</i>	290	4,265	...	..	4,555
Sailed July 15.					
<i>Themistocles</i>	100	1,883	...	..	1,983
<i>Port Melbourne</i>	29	1,637	...	..	1,666
<i>Northern Pacific</i>	96	2,239	...	..	2,335
<i>Great Northern</i>	100	2,634	...	10	2,744
<i>Saxonia</i>	261	2,268	...	..	2,529
Sailed July 17.					
<i>La Lorraine</i>	2	...	...	..	2
Sailed July 18.					
<i>Regina d'Italia</i>	67	1,629	...	..	1,696
<i>Ophir</i>	5	104	...	..	109
<i>Rijndam</i>	121	2,994	...	..	3,115
<i>Lenape</i>	49	1,804	...	..	1,853
<i>Antigone</i>	87	2,068	...	..	2,155
<i>George Washington</i>	416	5,106	...	2	5,524
Sailed July 21.					
<i>Grampian</i>	65	2,293	...	..	2,358
<i>Minnekahda</i>	108	3,711	...	..	3,819
<i>Anchises</i>	62	1,956	100	6	2,124
<i>Canopic</i>	189	1,279	...	..	1,468
<i>Plattsburg</i>	105	2,083	...	..	2,188
Sailed July 22.					
<i>Harrisburg</i>	100	2,348	...	..	2,448
<i>Celebes</i>	1	...	...	..	1
<i>Nevasa</i>	49	2,057	...	..	2,106
<i>Neleus</i>	33	1,261	...	..	1,294
<i>Northumberland</i>	23	1,992	...	..	2,015
<i>Arlanza</i>	4	407	...	..	411
<i>Diomed</i>	26	1,221	...	..	1,247
<i>Orca</i>	90	2,414	...	..	2,504
<i>Carnania</i>	237	3,373	...	1	3,611
Sailed July 23.					
<i>Tydeus</i>	21	1,290	1,311
<i>Vestris</i>	44	1,476	1,520
<i>Corinthic</i>	43	1,525	1,568

APPENDIX

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TROOP SAILINGS FROM NEW YORK (*Continued*)

Name of ship	Strength				Total
	Officers	Men	Nurses	Civilians	
Sailed July 24.					
<i>Beltana</i>	35	2,110	...	..	2,145
Sailed July 26.					
<i>Taormina</i>	101	2,579	...	..	2,680
<i>Finland</i>	174	3,705	...	..	3,879
<i>Kroonland</i>	173	3,075	...	..	3,248
Sailed July 30.					
<i>Canada</i>	84	1,657	...	..	1,741
<i>Teucer</i>	40	1,478	...	..	1,518
<i>Mauretania</i>	272	4,852	...	16	5,140
Sailed July 31.					
<i>Scandinavian</i>	60	1,935	...	..	1,995
<i>Ulua</i>	32	1,072	...	..	1,104
<i>Helenus</i>	28	1,159	...	..	1,187
<i>Elpenor</i>	17	1,277	...	..	1,294
<i>Empress of Asia</i>	153	2,395	...	..	2,548
<i>Maunganui</i>	66	2,126	...	..	2,192
<i>Melita</i>	69	2,179	...	..	2,248
<i>Megantic</i>	181	1,589	100	2	1,872
<i>Walmer Castle</i>	82	1,654	127	5	1,868
<i>Mandingo</i>	122	1,490	...	..	1,612
<i>Orduna</i>	124	1,579	...	..	1,703
<i>Anselm</i>	23	1,146	...	..	1,169
<i>Calamares</i>	57	1,552	...	..	1,609
<i>H. R. Mallory</i>	49	1,804	...	..	1,853
<i>Siboney</i>	113	3,384	...	..	3,497
<i>Maui</i>	80	3,724	...	16	3,820
<i>Orizaba</i>	94	3,205	...	..	3,299
<i>Buford</i>	1	...	...	..	1
Sailed August 1.					
<i>Yosemite</i>	1	...	...	..	1
Sailed August 3.					
<i>Northern Pacific</i>	77	2,523	...	..	2,600
<i>Great Northern</i>	114	2,948	...	..	3,062
<i>Leviathan</i>	487	10,394	...	3	10,884
<i>Colon</i> . . . . .	...	5	...	..	5
Sailed August 5.					
<i>Aquitania</i>	403	5,676	...	48	6,127
<i>America</i>	1	...	...	..	1
Sailed August 6.					
<i>Mongolia</i>	158	3,532	...	..	3,690
Sailed August 7.					
<i>Metagama</i>	104	2,011	...	..	2,115
Sailed August 8.					
<i>Mentor</i>	17	1,313	...	..	1,330
<i>Otranto</i>	16	744	...	..	760
<i>Lapland</i>	172	2,320	...	..	2,492
<i>Tereisias</i>	25	1,198	...	..	1,223

THE ROAD TO FRANCE
TROOP SAILINGS FROM NEW YORK (Continued)

Name of ship	Officers	Men	Strength		Total
			Nurses	Civilians	
<i>Osterley</i>	74	1,917	...	..	1,991
<i>Nestor</i>	91	2,780	...	..	2,871
<i>Balmoral Castle</i>	214	1,874	...	1	2,089
<i>Empress of Russia</i>	98	3,101	...	..	3,199
<i>Cretic</i>	65	1,933	101	6	2,105
<i>Louisville</i>	109	2,181	...	..	2,290
Sailed August 9.					
<i>Rochambeau</i>	20	517	...	..	537
<i>Olympic</i>	239	5,780	200	21	6,240
Sailed August 11.					
<i>Port Dennison</i>	22	1,278	...	..	1,300
<i>Delta</i>	50	1,994	...	..	2,044
<i>Laomedon</i>	22	1,244	...	..	1,266
<i>Vauban</i>	66	1,345	...	..	1,411
Sailed August 13.					
<i>Casco</i>	1	...	...	..	1
Sailed August 14.					
<i>Matsonia</i>	96	2,214	...	..	2,310
Sailed August 15.					
<i>Armagh</i>	43	1,906	...	1	1,950
<i>Missanabie</i>	83	1,892	...	5	1,980
<i>Oxfordshire</i>	104	1,896	...	..	2,000
<i>Briton</i>	56	1,807	...	..	1,863
<i>Ascanius</i>	51	1,986	...	..	2,037
<i>Teutonic</i>	8	358	...	..	366
<i>Kashmir</i>	44	2,107	...	..	2,151
<i>Saxon</i>	132	2,007	...	17	2,156
Sailed August 16.					
<i>Euripides</i>	40	2,385	...	..	2,425
<i>Scotian</i>	69	2,941	...	..	2,710
<i>Karoa</i>	36	1,632	...	..	1,668
<i>Plassy</i>	69	1,660	...	..	1,729
<i>Ulysses</i>	69	2,747	...	..	2,816
<i>Niagara</i>	32	840	...	..	872
Sailed August 17.					
<i>Bohemian</i>	55	2,246	...	..	2,301
<i>Italia</i>	22	1,101	...	..	1,123
<i>Vedic</i>	66	2,368	...	..	2,434
<i>Demosthenes</i>	112	1,744	...	..	1,856
<i>Kermanshah</i>	1	...	...	..	1
Sailed August 18.					
<i>Tras-os-Montes</i>	104	2,004	...	..	2,108
<i>America</i>	214	3,739	...	..	3,953
<i>Von Steuben</i>	31	860	...	..	891
<i>George Washington</i>	320	5,196	...	..	5,516
Sailed August 21.					
<i>Cherokee</i> (for Bahama Islands)	1	...	...	..	1

TROOP SAILINGS FROM NEW YORK (*Continued*)

Name of ship	Officers	Men	Strength		Total
			Nurses	Civilians	
Sailed August 22.					
<i>President Grant</i>	229	5,299	...	..	5,528
<i>Wilhelmina</i>	66	2,004	...	..	2,070
<i>De Kalb</i>	22	1,013	...	..	1,035
<i>Rijndam</i>	157	3,039	...	1	3,197
<i>Lenape</i>	69	1,955	...	..	2,024
<i>Toloa</i>	67	1,242	...	..	1,309
<i>Sobral</i>	66	2,596	...	..	2,662
Sailed August 23.					
<i>Chicago</i>	55	994	...	..	1,049
<i>Princess Juliana</i>	26	1,330	...	..	1,356
Sailed August 24.					
<i>Alsatian</i>	15	716	...	..	731
<i>Adriatic</i>	39	2,389	100	6	2,534
<i>Pyrrhus</i>	18	1,312	...	..	1,330
<i>Zeelandia</i>	27	1,422	...	..	1,449
<i>Caronia</i>	256	4,230	...	..	4,486
<i>Empress of Britain</i>	94	4,010	...	1	4,105
<i>Black Arrow</i>	2	40	...	..	42
<i>Cedric</i>	71	3,585	...	..	3,656
<i>Ceramic</i>	66	3,188	...	..	3,254
Sailed August 25.					
<i>Texan</i>	1	...	...	..	1
<i>Santa Luisa</i>	3	88	...	..	91
<i>La Lorraine</i> (Hague, Hol- land, via England)	1	...	...	..	1
Sailed August 26.					
<i>Agamemnon</i>	107	3,192	99	..	3,398
<i>Mt. Vernon</i>	130	4,634	...	4	4,768
<i>La France</i>	177	4,201	201	6	4,583
<i>Khyber</i>	53	2,022	...	..	2,075
<i>Hororata</i>	37	2,067	...	..	2,104
<i>Khiva</i>	31	1,563	...	..	1,594
<i>Llanstephen Castle</i>	39	1,972	148	4	2,163
<i>Persic</i>	38	1,961	...	..	1,999
Sailed August 27.					
<i>Mauretania</i>	224	4,938	...	3	5,165
Sailed August 29.					
<i>Espagne</i> . . . . .	...	...	...	15	15
Sailed August 30.					
<i>Harrisburg</i>	76	2,298	...	..	2,374
<i>Plattsburg</i>	110	2,084	...	..	2,194
<i>Susquehanna</i>	82	2,479	...	..	2,561
<i>Kroonland</i>	186	3,148	...	..	3,334
Sailed August 31.					
<i>Ortega</i>	49	1,801	...	..	1,850
<i>Derbyshire</i>	66	1,294	...	..	1,360
<i>Dunvegan Castle</i>	45	1,322	...	..	1,367

THE ROAD TO FRANCE
TROOP SAILINGS FROM NEW YORK (*Continued*)

Name of ship	Officers	Men	Strength		Total
			Nurses	Civilians	
<i>Lancashire</i>	75	2,087	98	1	2,261
<i>Northern Pacific</i>	111	2,644	...	3	2,758
<i>Great Northern</i>	122	2,880	...	..	3,002
<i>Leviathan</i>	414	10,035	98	1	10,548
Sailed September 1.					
<i>Lycaon</i>	19	1,090	...	..	1,109
<i>Baltic</i>	236	2,907	100	1	3,244
<i>Talthybius</i>	71	2,320	...	..	2,391
<i>Edinburgh Castle</i>	8	525	...	..	533
<i>Katoomba</i>	148	2,061	...	..	2,209
<i>Nevasa</i>	55	1,879	...	..	1,934
<i>Belgic</i>	118	4,982	...	..	5,100
<i>Anchises</i>	96	1,994	...	..	2,090
<i>Carmania</i>	160	3,265	...	..	3,425
Sailed September 2.					
<i>Aquitania</i>	241	5,729	202	4	6,176
<i>Ophir</i>	2	120	...	..	122
Sailed September 3.					
<i>Ajax</i>	10	1,335	...	..	1,345
<i>Vasari</i>	75	1,296	...	..	1,371
<i>City of Marseilles</i>	75	1,359	...	7	1,441
<i>Benalla</i>	43	1,936	...	..	1,979
<i>Karmala</i>	50	1,981	...	..	2,031
Sailed September 4.					
<i>Orizaba</i>	85	3,063	...	..	3,148
<i>Siboney</i>	130	3,305	...	..	3,435
<i>Maui</i>	99	3,583	...	..	3,682
<i>Pleiades</i>	1	2	...	..	3
Sailed September 8.					
<i>Desna</i>	71	1,684	...	..	1,755
<i>Agapenor</i>	22	1,507	...	..	1,529
<i>Manchuria</i>	133	3,918	...	2	4,053
<i>Mercury</i>	105	2,631	...	..	2,736
<i>H. R. Mallory</i>	52	1,876	...	..	1,928
Sailed September 9.					
<i>Empress of Asia</i>	184	2,363	...	..	2,547
<i>Minnekahda</i>	162	3,625	...	..	3,787
<i>Canada</i>	125	1,699	...	..	1,824
<i>Grampian</i>	92	2,192	...	..	2,284
<i>Scandinavian</i>	55	2,065	...	..	2,120
<i>Neleus</i>	25	1,182	...	..	1,207
<i>Elpenor</i>	15	1,338	...	..	1,353
<i>Walmer Castle</i>	219	1,684	97	..	2,000
<i>Melita</i>	118	2,137	100	1	2,356
<i>Northumberland</i>	24	2,012	...	..	2,036
<i>Orduna</i>	101	1,648	100	3	1,852
<i>Megantic</i>	85	1,705	100	..	1,890
<i>Canopic</i>	73	1,514	1,587

APPENDIX

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TROOP SAILINGS FROM NEW YORK (Continued)

Name of ship	Officers	Men	Strength			Total
			Nurses	Civilians		
Sailed September 10.						
<i>Julia Luckenbach</i>	1	...	...	..		1
Sailed September 11.						
<i>Edward Luckenbach</i>	1	...	...	..		1
Sailed September 14.						
<i>Olympic</i>	147	5,471	306	38		5,962
<i>Celebes</i>	1	...	...	..		1
Sailed September 15.						
<i>Louisville</i>	159	2,106	...	..		2,265
<i>Matsonia</i>	89	2,092	...	61		2,242
<i>Calamares</i>	42	1,553	...	..		1,595
<i>Powhatan</i>	73	2,436	...	..		2,509
<i>Martha Washington</i>	117	2,912	...	..		3,029
<i>Pocahontas</i>	111	2,809	...	..		2,920
<i>Finland</i>	171	3,505	...	2		3,678
<i>Utua</i>	44	1,187	...	..		1,231
Sailed September 16.						
<i>Mentor</i>	17	1,425	...	..		1,442
<i>Helenus</i>	23	1,143	...	..		1,166
<i>Balmoral Castle</i>	155	1,853	100	1		2,109
<i>Orca</i>	98	2,271	...	..		2,369
Sailed September 17.						
<i>Maunganui</i>	53	1,815	...	..		1,868
<i>Cretic</i>	146	1,967	...	..		2,113
<i>Empress of Russia</i>	88	3,134	...	..		3,222
<i>Arlanza</i>	15	709	...	..		724
<i>Metagama</i>	117	1,938	...	..		2,055
<i>Tereisias</i>	22	1,264	...	..		1,286
<i>Nestor</i>	91	2,108	...	..		2,199
<i>Lapland</i>	198	2,838	...	6		3,042
Sailed September 18.						
<i>Rochambeau</i>	20	899	...	..		919
Sailed September 20.						
<i>America</i>	187	4,988	...	1		5,176
<i>Agamemnon</i>	141	3,100	...	..		3,241
Sailed September 22.						
<i>Clare</i>	1	...	...	..		1
Sailed September 23.						
<i>President Grant</i>	195	5,338	...	..		5,533
<i>Wilhelmina</i>	88	1,958	...	..		2,046
<i>Rijndam</i>	124	2,837	...	..		2,961
<i>Princess Matoika</i>	65	3,596	...	..		3,661
<i>Mongolia</i>	113	3,998	...	..		4,111
<i>Ascanius</i>	41	1,945	...	..		1,986
Sailed September 24.						
<i>Saxon</i>	83	2,080	100	22		2,285
<i>Kashmir</i>	59	2,009	...	..		2,068

THE ROAD TO FRANCE
TROOP SAILINGS FROM NEW YORK (Continued)

Name of ship	Strength				Total
	Officers	Men	Nurses	Civilians	
Sailed September 25.					
<i>Otranto</i>	8	691	...	..	699
<i>La Lorraine</i>	7	172	...	1	180
<i>Briton</i>	65	1,760	...	..	1,825
<i>Oxfordshire</i>	32	1,371	...	..	1,403
<i>Rhesus</i>	19	1,292	...	..	1,311
<i>City of York</i>	74	1,456	...	..	1,530
<i>Teucer</i>	48	1,976	...	..	2,024
<i>Plassy</i>	33	1,287	...	..	1,320
<i>Scotian</i>	74	2,336	...	..	2,410
<i>Oriana</i>	91	766	...	..	857
<i>Orontes</i>	66	1,770	...	..	1,836
Sailed September 26.					
<i>La France</i>	65	4,138	202	2	4,407
<i>Northern Pacific</i>	84	2,613	...	93	2,790
<i>Pawnee</i>	1	...	...	..	1
<i>Great Northern</i>	92	2,641	...	..	2,733
<i>Tabor</i>	1	...	...	..	1
<i>Buford</i>	1	...	...	..	1
<i>Sixaola</i>	1	...	...	..	1
Sailed September 29.					
<i>Leviathan</i>	261	8,872	189	4	9,326
Sailed September 30.					
<i>Appeles</i>	2	87	...	..	89
<i>George Washington</i>	221	4,216	118	1	4,556
<i>Armagh</i>	34	1,852	...	..	1,886
<i>Caronia</i>	119	3,922	...	73	4,114
<i>Ulysses</i>	48	2,480	...	..	2,528
Sailed October 1.					
<i>Espagne</i>	6	170	...	..	176
Sailed October 2.					
<i>Aquitania</i>	348	5,039	...	..	5,387
Sailed October 4.					
<i>Wabash</i>	1	...	...	..	1
Sailed October 6.					
<i>Siboney</i>	116	2,895	...	..	3,011
<i>Orizaba</i>	94	2,712	...	..	2,806
<i>Adriatic</i>	229	2,504	30	..	2,763
<i>Pyrrhus</i>	17	1,299	...	..	1,316
<i>Princess Juliana</i>	31	1,138	...	..	1,169
<i>City of Exeter</i>	98	1,182	...	..	1,280
<i>Zeelandia</i>	63	1,416	...	..	1,479
<i>Empress of Britain</i>	87	3,472	...	..	3,559
<i>Cedric</i>	79	3,189	...	..	3,268
<i>Derbyshire</i>	40	1,119	1,159
<i>Karoa</i>	32	1,456	1,488
<i>Lancashire</i>	84	1,911	1,995
<i>Niagara</i>	34	918	952

APPENDIX

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TROOP SAILINGS FROM NEW YORK (Continued)

Name of ship	Strength				Total
	Officers	Men	Nurses	Civilians	
<i>Carmania</i>	73	2,797	...	1	2,871
Sailed October 7.					
<i>Kroonland</i>	157	2,410	...	..	2,567
<i>Caserta</i>	44	1,533	...	..	1,577
<i>Euripides</i>	75	2,218	...	1	2,294
Sailed October 11.					
<i>Plattsburg</i>	99	1,426	1	1	1,527
<i>Mau</i>	94	2,965	...	..	3,059
<i>Harrisburg</i>	63	1,827	...	..	1,890
Sailed October 12.					
<i>Santa Luisa</i>	1	53	...	..	54
<i>Dunvegan Castle</i>	55	923	...	..	978
<i>Ortega</i>	84	1,336	...	..	1,420
<i>Baltic</i>	107	2,334	...	3	2,444
<i>Ceramic</i>	74	2,347	...	..	2,421
Sailed October 13.					
<i>Talthebius</i>	53	1,778	...	..	1,831
<i>Anchises</i>	59	1,765	...	..	1,824
<i>Toloa</i>	42	835	...	..	877
<i>Nevasa</i>	47	1,588	...	..	1,635
<i>Melita</i>	81	1,665	...	..	1,746
<i>Osterley</i>	87	1,182	...	..	1,269
<i>Lycaon</i>	22	903	...	..	925
<i>Edinburgh Castle</i>	14	460	...	..	474
<i>Khiva</i>	40	1,236	...	..	1,276
Sailed October 14.					
<i>H. R. Mallory</i>	55	1,233	...	..	1,288
<i>Duc d'Abruzzi</i>	67	1,474	...	..	1,541
Sailed October 16.					
<i>Northern Pacific</i>	6	496	...	..	502
<i>Agamemnon</i>	156	1,452	...	47	1,655
Sailed October 17.					
<i>Olympic</i>	457	5,529	...	..	5,986
Sailed October 18.					
<i>Panama</i>	3	70	...	..	73
Sailed October 19.					
<i>Westerdijk</i>	2	59	...	..	61
<i>Walmer Castle</i>	51	1,127	...	..	1,188
<i>Elpenor</i>	16	958	...	..	974
Sailed October 20.					
<i>Grampian</i>	62	1,769	...	..	1,831
<i>Belgic</i>	82	2,314	...	..	2,396
<i>Scandinavian</i>	30	1,491	...	..	1,521
<i>Orsova</i>	66	1,716	...	..	1,782
<i>Megantic</i>	98	1,522	...	3	1,623
<i>Agapenor</i>	13	789	...	..	802
<i>Neleus</i>	13	846	...	..	859
<i>Orduna</i>	30	1,102	...	..	1,132

THE ROAD TO FRANCE
TROOP SAILINGS FROM NEW YORK (*Continued*)

Name of ship	Officers	Men	Strength		Total
			Nurses	Civilians	
<i>Northumberland</i>	21	1,490	...	..	1,511
Sailed October 21.					
<i>Pocahontas</i>	41	3	...	..	44
<i>Sobral</i>	80	2,112	...	..	2,192
Sailed October 24.					
<i>Rochambeau</i>	26	781	...	15	822
Sailed October 25.					
<i>Rappahannock</i>	1	39	...	..	40
Sailed October 26.					
<i>Siamese Prince</i>	3	77	...	..	80
<i>Tahiti</i>	19	867	...	..	886
<i>Leicestershire</i>	70	1,294	25	..	1,389
<i>Tereisias</i>	22	950	...	..	972
<i>Laplant</i>	70	2,012	19	..	2,101
<i>Canada</i>	65	1,146	25	..	1,236
<i>Cretic</i>	50	1,411	25	..	1,486
<i>Artemis</i>	2	160	...	..	162
<i>Kentuckian</i>	2	60	...	..	62
Sailed October 27.					
<i>Tjkenbang</i>	3	80	...	..	83
<i>Oregonian</i>	3	49	...	..	52
<i>Leviathan</i>	368	7,198	...	4	7,570
<i>Minnekahda</i>	55	2,057	...	..	2,112
<i>Maunganui</i>	44	948	...	..	992
<i>Metagama</i>	15	721	14	..	750
<i>Mentor</i>	15	1,059	...	..	1,074
<i>Helenus</i>	10	391	...	..	401
<i>Orca</i>	71	1,568	...	1	1,640
<i>Balmoral Castle</i>	200	818	5	..	1,023
Sailed October 28.					
<i>Wilhelmina</i>	53	1,198	...	..	1,251
<i>Princess Matoika</i>	101	2,624	...	..	2,725
<i>Rijndam</i>	95	2,278	...	..	2,373
<i>President Grant</i>	193	3,154	85	..	3,432
<i>Mongolia</i>	101	3,193	...	..	3,294
<i>Kursk</i>	13	961	...	..	974
Sailed October 29.					
<i>Nansemond</i>	4	164	...	..	168
Sailed October 31.					
<i>Great Northern</i>	87	1,614	1	..	1,702
<i>George Washington</i>	206	3,443	...	..	3,649
Sailed November 1.					
<i>Ohioan</i>	3	57	...	..	60
Sailed November 2.					
<i>Roepat</i>	3	57	60
<i>Aquitania</i>	445	5,263	...	9	5,717
Sailed November 4.					
<i>Orizaba</i>	10	1	...	2	13

APPENDIX

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TROOP SAILINGS FROM NEW YORK (*Continued*)

<i>Name of ship</i>	<i>Strength</i>				<i>Total</i>
	<i>Officers</i>	<i>Men</i>	<i>Nurses</i>	<i>Civilians</i>	
<i>Siboney</i>	17	...	...	..	17
<i>Moorish Prince</i>	3	85	...	..	88
<i>Manchurian Prince</i>	2	65	...	..	67
<i>Finland</i>	26	...	...	..	26
<i>Canopic</i>	10	41	1	2	54
<i>Saxon</i>	1	...	...	..	1
<i>Plassy</i>	3	...	...	..	3
<i>Teucer</i>	1	...	...	..	1
<i>Scotian</i>	1	...	...	..	1
<i>Ascanius</i>	4	...	...	..	4
Sailed November 5.					
<i>Besoiki</i>	1	...	...	..	1
Sailed November 8.					
<i>Calamares</i>	1	...	...	..	1
Sailed November 9.					
<i>Tjisondari</i> (held account trouble and sailed again November 27)	3	67	...	..	70
<i>Iowan</i>	3	69	...	..	72
<i>Charlton Hall</i>	2	52	...	..	54
Sailed November 10.					
<i>Mauretania</i>	230	3,941	23	8	4,202

APPENDIX F

LIST OF AMERICAN TRANSPORTS IN THE WORLD WAR

Name	Owners	Operated and Manned by	Total Speed, knots D. W.* per hour	Troops	Disposition
TROOP TRANSPORTS					
<i>ÆOLUS</i> (Ex-Grosser Kurfurst)	U. S. Government	Navy	12,350	120 Off.†	‡Trans. to U. S. A. T. Reserve
<i>AGAMEMNON</i> (Ex-Kaiser Wilhelm II)	U. S. Government	Army	8,700	3,065 E. M.§ 450 Off.	Trans. to U. S. A. T. Reserve
<i>AMERICA</i> (Ex-Amerika)	U. S. Government	Navy	21,810	5,400 E. M. 246 Off.	.....
<i>ANTIGONE</i> (Ex-Neckar)	U. S. Government	Navy	11,000	6,701 E. M. 130 Off.	.....
<i>COVINGTON</i> (Ex-Cincinnati)	U. S. Government	Navy	12,357	3,304 E. M. (Pass. Accom.)||	Sunk en route to U. S.
<i>DE KALB</i> (Ex-Prinz Eitel Friedrich)	U. S. Government	Navy	8,200	2,449 52 Off.	Trans. to U. S. A. T. Reserve
<i>FINLAND</i>	International Mercantile Marine Co.	Navy	12,000	1,212 E. M. 182 Off.	Redelivered
<i>GEORGE WASHINGTON</i>	U. S. Government	Army	13,300	3,497 E. M. 485 Off.	.....
<i>GREAT NORTHERN</i>	U. S. Army	Army	6,000	6,551 E. M. 165 Off.	.....
				21	2,941 E. M.

* D. W. = Deadweight Tonnage.

† Off. = Officers.

‡ Transferred to United States Army Transport Reserve.

§ E. M. = Enlisted Men.

|| Passenger Accommodations.

LIST OF AMERICAN TRANSPORTS IN THE WORLD WAR (Continued)

Name	Owners	Operated and Manned by	Total D. W.	Speed, knots per hour	Troops	Disposition
HARRISBURG (Ex-Philadelphia)	International Mercantile Marine Co.	Navy	5,750	18	133 Off.	Redelivered
HAVANA	New York & Cuba Mail S. S. Co.	Owners	5,400	..	2,446 E. M.	Redelivered
HENDERSON	U. S. Navy	Navy			86 Off.	Returned to Navy
H. R. MALLORY	Mallory S. S. Co.		3,570	13.5	1,942 E. M.	Redelivered
HURON	U. S. Government	Navy	7,480	15	39 Off.	Redelivered
(Ex-Friedrich Der Grosse)					1,996 E. M.	
KON. DER NEDERLANDEN	Dutch Government	Navy	11,080	15	149 Off.	Trans. to U. S. A. T. Reserve
					3,312 E. M.	
KROONLAND	International Mercantile Marine Co.	Navy	6,850	14	114 Off.	Redelivered
					2,152 E. M.	
LEVATHAN	U. S. Government	Navy	12,000	15	148 Off.	Redelivered
(Ex-Vaterland)					3,611 E. M.	
LOUISVILLE	International Mercantile Marine Co.	Navy	15,000	22.2	488 Off.	Trans. to U. S. A. T. Reserve
					11,919 E. M.	
MADAWASKA	U. S. Government	Navy	5,923	15.5	176 Off.	Redelivered
(Ex-König Wilhelm II)					2,180 E. M.	
MANCHURIA	Atlantic Transportation Co.	Navy	7,200	13.5	141 Off.	.....
					2,405 E. M.	
MARTHA WASHINGTON	U. S. Government	Navy	14,500	14	169 Off.	Redelivered
					4,719 E. M.	
MATSONIA	Matson Navigation Co.	Navy	6,500	18	115 Off.	.....
					2,839 E. M.	
			12,000	16	80 Off.	Redelivered
					3,269 E. M.	

LIST OF AMERICAN TRANSPORTS IN THE WORLD WAR (Continued)

Name	Owners	Operated and Manned by	Total Speed, knots D. W. per hour	Troops	Disposition
MAUI	Matson Navigation Co.	Navy	12,000	105 Off. 3,625 E. M.	Redelivered
MERCURY (Ex-Barbarossa)	U. S. Government	Army	10,350	87 Off. 3,100 E. M.	.....
MONGOLIA	Atlantic Transpor- tation Co.	Navy	14,500	195 Off. 4,497 E. M.	Redelivered
MOUNT VERNON (Ex-Kronprinzessin Cecile)	U. S. Government	Navy	8,300	246 Off. 5,565 E. M.	.....
NORTHERN PACIFIC	U. S. Government	Navy	6,000	98 Off. 2,600 E. M.	.....
ORIZABA	U. S. S. B.¶	Navy	4,305	118 Off. 3,900 E. M.	.....
PASTORES	United Fruit Co.	Navy	7,000	76 Off. 2,138 E. M.	Redelivered
PLATTSBURG (Ex-New York)	International Mer- cantile Marine Co.	Navy	5,750	125 Off. 2,295 E. M.	Redelivered
POCAHONTAS (Ex-Princess Irene)	U. S. Government	Navy	10,550	77 Off. 2,848 E. M.	.....
POWHATAN (Ex-Hamburg)	U. S. Government	Navy	9,980	97 Off. 2,806 E. M.	.....
PRESIDENT GRANT	U. S. Government	Navy	19,810	228 Off. 5,319 E. M.	.....
PRESIDENT LINCOLN	U. S. Government	Navy	20,160	(Pass. Accom.) 3,682	Sunk off coast of France
PRINCESS MATOIKA (Ex-Princess Alice)	U. S. Government	Navy	10,300	105 Off. 3,689 E. M.	.....

¶ U. S. S. B. = United States Shipping Board.

LIST OF AMERICAN TRANSPORTS IN THE WORLD WAR (Continued)

Name	Owners	Operated and Manned by	Total Speed, knots per hour	Troops	Disposition
RIJNDAM	Dutch	Navy	13,625	170 Off.	Redelivered
SANTA TERESA	U. S. S. B.	Navy	4,986	2,900 E. M. 60 Off.	Redelivered
SARATOGA	N. Y. & Cuba Mail S. S. Co.	Navy	5,084	1,852 E. M. 80 Off.	Redelivered
SIBONEY (Ex-Oriente)	U. S. S. B.	Army	4,305	1,500 E. M. 118 Off.	.....
SIERRA	Oceanic Steam- ship Co.	Navy	5,230	3,961 E. M. 107 Off.	Redelivered
SUSQUEHANNA (Ex-Rhein)	U. S. Government	Navy	11,650	1,437 E. M. 151 Off.	Trans. to U. S. A. T. Reserve
TENADORES	United Fruit Co.	Navy	7,000	2,934 E. M. 70 Off.	Sunk off Bay of Biscay
VON STEUBEN (Ex-Kronprinz Wilhelm)	U. S. Government	Navy	6,900	2,130 E. M. 128 Off.	Trans. to U. S. A. T. Reserve
WILHELMINA	Matson Navigation Co.	Navy	8,500	2,842 E. M. 75 Off.	Redelivered
ZEELANDIA	Dutch	Navy	7,850	1,674 E. M. 102 Off. 2,467 E. M.	Redelivered
TROOP TRANSPORTS WHICH WERE FORMERLY CARGO TRANSPORTS					
ALASKAN	American-Hawaiian Steamship Co.	Navy	14,185	23 Off. 2,104 E. M.	Redelivered
AMPHION (Ex-Köln)	U. S. Government	Navy	8,970	73 Off. 2,390 E. M.	Trans. to U. S. A. T. Reserve

LIST OF AMERICAN TRANSPORTS IN THE WORLD WAR (Continued)

<i>Name</i>	<i>Owners</i>	<i>Operated and Manned by</i>	<i>Total Speed, knots D. W. per hour</i>	<i>Troops</i>	<i>Disposition</i>
ANCON	Panama Railroad Co.	Navy	13,000	40 Off. 3,016 E. M.	Redelivered
ARCADIA	U. S. S. B.	Navy	7,140	30 Off. 1,012 E. M.	Redelivered
ARIZONIAN	American-Hawaian Steamship Co.	Navy	14,240	29 Off. 2,431 E. M.	Redelivered
ARTEMIS (Ex-Bohemia)	U. S. S. B.	Navy	12,190	33 Off. 2,619 E. M.	Trans. to U. S. A. T. Reserve
BLACK ARROW (Ex-Black Hawk)	U. S. S. B.	Navy	7,490	10 1,510 E. M.	Redelivered
BUFORD	U. S. Government	Army	6,000	55 Off.	.....
CALAMARES	United Fruit Co.	Navy	7,000	1,534 E. M. 64 Off.	Redelivered
CALLAO (Ex-Sierra Cordova)	Peruvian Govern- ment—U. S. S. B.	Navy	8,200	107 Off. 2,262 E. M.	Redelivered
CANANDAIGUA (Ex-Siglo)	Southern Pacific Railway Co.	Navy	3,964	30 Off. 1,336 E. M.	Redelivered
CANONICUS (Ex-El Cid)	Southern Pacific Railway Co.	Navy	3,964	35 Off. 1,512 E. M.	Redelivered
CAPE MAY	U. S. S. B.	Navy	10,100	30 Off. 1,997 E. M.	Redelivered
DAKOTAN	American-Hawaian Steamship Co.	Navy	10,165	25 Off. 1,660 E. M.	Redelivered
EDELLYN	U. S. S. B.	Army	12,100	70 Off. 1,983 E. M.	.....

LIST OF AMERICAN TRANSPORTS IN THE WORLD WAR (Continued)

Name	Owners	Operated and Manned by	Total Speed, knots D. W. per hour	Troops	Disposition
EDGAR F. LUCKENBACH	Luckenbach Co., Inc.	Navy	12,650	30 Off. 2,330 E. M.	Redelivered
EDWARD LUCKENBACH	Luckenbach Co., Inc.	Navy	12,250	17 Off. 2,244 E. M.	Redelivered
EL ORIENTE	Southern Pacific Railway Co.	Navy	6,850	45 Off. 1,980 E. M.	Redelivered
EL SOL	Southern Pacific Railway Co.	Navy	6,850	45 Off. 1,778 E. M.	Redelivered
ETEN (Ex-Rhakotis)	Peruvian Government—U. S. S. B.	Navy	8,500	81 Off. 1,761 E. M.	Redelivered
EURANA	Nafra Company	Navy	9,495	43 Off. 1,746 E. M.	Redelivered
F. J. LUCKENBACH	Luckenbach Co., Inc.	Navy	11,555	25 Off. 2,309 E. M.	Redelivered
FLORIDIAN	American-Hawaiian Steamship Co.	Navy	10,310	28 Off. 1,774 E. M.	Redelivered
FREEDOM (Ex-Iroquois)	U. S. Government	Navy	6,800	26 Off. 1,625 E. M.	Trans. to U. S. A. T. Reserve
GEN. G. W. GOETHALS (Ex-Grünewald)	Panama Railroad Co.	Navy	5,437	34 Off. 1,388 E. M.	Redelivered
GEN. W. C. GORGAS (Ex-Prinz Sigsmund)	Panama Railroad Co.	Navy	5,520	40 Off. 1,048 E. M.	Redelivered
HOUSATONIC (Ex-El Rio)	Southern Pacific Railway Co.	Navy	3,964	34 Off. 1,350 E. M.	Redelivered
IOWAN	American-Hawaiian Steamship Co.	Navy	9,900	35 Off. 1,767 E. M.	Redelivered

LIST OF AMERICAN TRANSPORTS IN THE WORLD WAR (Continued)

Name	Owners	Operated and Manned by	Total Speed, knots		Troops	Disposition
			D. W.	per hour		
<i>JULIA LUCKENBACH</i>	Luckenbach Co., Inc.	Navy	12,250	13	22 Off. 2,692 E. M.	Redelivered
<i>KATRINA LUCKENBACH</i>	Luckenbach Co., Inc.	Navy	11,555	12	15 Off. 2,255 E. M.	Redelivered
<i>KENTUCKIAN</i>	American-Hawaiian Steamship Co.	Navy	9,950	13	28 Off. 1,100 E. M.	Redelivered
<i>K. I. LUCKENBACH</i>	Luckenbach Co., Inc.	Navy	11,555	12	15 Off. 2,394 E. M.	Redelivered
<i>LANCASTER</i>	U. S. S. B.	Navy	11,572	9	30 Off. 2,250 E. M.	Redelivered
<i>LIBERATOR</i>	U. S. S. B.	Navy	11,713	9.5	29 Off. 2,482 E. M.	Redelivered
<i>NARICA</i>	U. S. S. B.	Navy	12,100	14	32 Off. 1,973 E. M.	.....
<i>MEXICAN</i>	American-Hawaiian Steamship Co.	Navy	13,795	11.5	35 Off. 3,447 E. M.	Redelivered
<i>MINNESOTAN</i>	American-Hawaiian Steamship Co.	Navy	10,165	12	25 Off. 2,032 E. M.	Redelivered
<i>MONTPELLIER</i> (<i>Ex-Bochum</i>)	U. S. S. B.	Navy	9,600	12	25 Off. 2,081 E. M.	Redelivered
<i>NANSEMOND</i> (<i>Ex-Pennsylvania</i>)	U. S. S. B.	Navy	15,002	11	153 Off. 5,140 E. M.	Redelivered
<i>OHIOAN</i>	American-Hawaiian Steamship Co.	Navy	9,900	12	26 Off. 1,605 E. M.	Redelivered
<i>OTSEGO</i> (<i>Ex-Prinz Eitel</i>)	U. S. S. B.	Navy	5,680	11	28 Off. 984 E. M.	Redelivered

LIST OF AMERICAN TRANSPORTS IN THE WORLD WAR (Continued)

Name	Owners	Operated and Manned by	Total Speed, knots D. W. per hour	Troops	Disposition
PANAMAN	American-Hawaiian Steamship Co.	Navy	9,900	25 Off. 2,174 E. M.	Redelivered
PAYSANDU (Ex-Bahia)	Uruguayan Govern- ment	Navy	6,100	25 Off. 1,390 E. M.	Redelivered
PEERLESS (Ex-Eagle)	Standard Transpor- tation Co.	Navy	9,950	31 Off. 2,350 E. M.	Redelivered
PHILIPPINES (Ex-Hercules)	U. S. S. B.	Navy	13,040	86 Off. 3,940 E. M.	Trans. to U. S. A. T. Reserve
RAINOR	U. S. S. B.	Navy	11,572	37 Off. 1,900 E. M.	Trans. to U. S. A. T. Reserve
ROANOKE (Ex-El Dia)	Southern Pacific Railway Co.	Navy	3,964	36 Off. 1,356 E. M.	Redelivered
SAINT PAUL	International Mer- cantile Marine Co.	Navy	5,923	250 Off. 2,000 E. M.	Redelivered
SANTA ANA	W. R. Grace & Co.	Navy	5,100	89 Off. 1,418 E. M.	Redelivered
SANTA BARBARA	W. R. Grace & Co.	Navy	9,400	26 Off. 1,549 E. M.	Redelivered
SANTA CECILIA	Nafra Company	Navy	9,200	18 Off. 2,036 E. M.	Redelivered
SANTA CLARA	Atlantic & Pacific Co.	Navy	9,200	18 Off. 1,741 E. M.	Redelivered
SANTA ELISA	U. S. S. B.	Navy	5,325	81 Off. 1,388 E. M.	Redelivered
SANTA LEONORA	U. S. S. B.	Navy	5,325	81 Off. 1,377 E. M.	.....

LIST OF AMERICAN TRANSPORTS IN THE WORLD WAR (Continued)

Name	Owners	Operated and Manned by	Total Speed, knots D. W. per hour	Troops	Disposition
SANTA MALTA	U. S. S. B.	Navy	9,500	32 Off. 1,674 E. M.	Redelivered
SANTA OLIVIA	W. R. Grace & Co.	Navy	9,428	32 Off. 1,825 E. M.	Redelivered
SANTA PAULA	W. R. Grace & Co.	Navy	9,400	26 Off. 1,984 E. M.	Redelivered
SANTA ROSA	W. R. Grace & Co.	Navy	9,400	46 Off. 1,930 E. M.	Redelivered
SCRANTON (Ex-Pennsylvania)	American-Hawaiian Steamship Co.	Navy	9,900	30 Off. 1,810 E. M.	Redelivered
SHOSHONE (Ex-Wasgenwald)	Shoshone Navigation Corp.	Navy	5,457	42 Off. 1,375 E. M.	Redelivered
SOL NAVIS	U. S. S. B.	Navy	12,100	39 Off. 2,025 E. M.	Redelivered
SOUTH BEND (Ex-M. E. Luckenbach)	U. S. S. B.	Navy	10,000	40 Off. 2,211 E. M.	.....
SUIWANE (Ex-Mark)	U. S. Government	Navy	11,496	56 Off. 1,939 E. M.	Trans. to U. S. A. T. Reserve
TEXAN	American-Hawaiian Steamship Co.	Navy	13,890	32 Off. 2,208 E. M.	Redelivered
TIGER	Standard Transportation Co.	Navy	9,950	31 Off. 2,860 E. M.	Redelivered
TROY (Ex-Minnesota)	Atlantic Transportation Co.	Navy	22,250	138 Off. 5,880 E. M.	Redelivered
VIRGINIAN (Ex-Maine)	American-Hawaiian Steamship Co.	Navy	11,210	54 Off. 4,091 E. M.	Redelivered
W. A. LUCKENBACH	Luckenbach Co., Inc.	Navy	11,254	28 Off. 2,500 E. M.	Redelivered

LIST OF AMERICAN TRANSPORTS IN THE WORLD WAR (Continued)

Name	Owners	Operated and Manned by	Total Speed, knots per hour	Troops	Disposition
EX-GERMAN LINERS ASSIGNED TO UNITED STATES UPON SIGNING OF ARMISTICE FOR RETURNING TROOPS					
<i>CAP FINISTERRE</i>	Assigned to U. S. by I. M. T. C.	Navy	21,754	16.5	350 Off. Redelivered
<i>GRAF WALDERSEE</i>	Assigned to U. S. by I. M. T. C.	Navy	13,750	12	3,543 E. M. 250 Off. Redelivered
<i>IMPERATOR</i>	Assigned to U. S. by I. M. T. C.	Navy	17,000	23.5	4,096 E. M. 1,150 Off. Redelivered
<i>KAISERIN AUGUSTA VICTORIA</i>	Assigned to U. S. by I. M. T. C.	Navy	23,210	17	722 Off. 4,961 E. M. 490 Off. Redelivered
<i>MOBILE</i> (Ex-Cleveland)	Assigned to U. S. by I. M. T. C.	Navy	12,754	15	4,620 E. M. 167 Off. Redelivered
<i>PATRICIA</i>	Assigned to U. S. by I. M. T. C.	Navy	14,200	13.5	2,688 E. M. 149 Off. Redelivered
<i>PRETORIA</i>	Assigned to U. S. by I. M. T. C.	Navy	14,130	12	2,885 E. M. Redelivered
<i>PRINZ FRIEDRICH WILHELM</i>	Assigned to U. S. by I. M. T. C.	Navy	8,900	17.5	600 Off. 3,000 E. M. 14 Off. Redelivered
<i>SANTA ELENA</i>	Assigned to U. S. by I. M. T. C.	Navy	5,600	16	850 E. M. 409 Off. Redelivered
<i>ZEPPELIN</i>	Assigned to U. S. by I. M. T. C.	Navy	9,600	13.5	3,638 E. M. Redelivered

° I. M. T. C. = Interallied Maritime Transport Council.

LIST OF AMERICAN TRANSPORTS IN THE WORLD WAR (Continued)

<i>Name</i>	<i>Type</i>	<i>Speed, knots per hour</i>	<i>Troops</i>	<i>Disposition</i>
NAVY BATTLESHIPS AND CRUISERS USED IN BRINGING TROOPS TO UNITED STATES				
CHARLESTON	Cruiser	12	151 Off. 1,389 E. M.	.....
CONNECTICUT	Battleship	12	48 Off. 1,352 E. M.	.....
FREDERICK	Cruiser	12	75 Off. 1,535 E. M.	.....
GEORGIA	Battleship	12	40 Off. 1,400 E. M.	.....
HUNTINGTON	Cruiser	12	58 Off. 1,800 E. M.	.....
KANSAS	Battleship	12	40 Off. 1,200 E. M.	.....
LOUISIANA	Battleship	12	42 Off. 1,400 E. M.	.....
MICHIGAN	Battleship	12	1,000 E. M.	.....
MINNESOTA	Battleship	12	40 Off. 1,200 E. M.	.....
MISSOURI	Battleship	12	25 Off. 750 E. M.	.....
MONTANA	Cruiser	12	79 Off. 1,425 E. M.	.....
NEBRASKA	Battleship	12	40 Off. 1,400 E. M.	.....
NEW HAMPSHIRE	Battleship	12	55 Off. 1,345 E. M.	.....

LIST OF AMERICAN TRANSPORTS IN THE WORLD WAR (Continued)

<i>Name</i>	<i>Type</i>	<i>Speed, knots per hour</i>	<i>Troops</i>	<i>Disposition</i>
<i>NEW JERSEY</i>	Battleship	12	40 Off. 1,100 E. M.	.....
<i>NORTH CAROLINA</i>	Cruiser	12	28 Off. 1,572 E. M.	.....
<i>OHIO</i>	Battleship	12	32 Off. 850 E. M.	.....
<i>PUEBLO</i>	Cruiser	12	50 Off. 1,750 E. M.	.....
<i>RHODE ISLAND</i>	Battleship	12	40 Off. 1,200 E. M.	.....
<i>ST. LOUIS</i>	Cruiser	12	40 Off. 1,500 E. M.	.....
<i>SEATTLE</i>	Cruiser	12	69 Off. 1,534 E. M.	.....
<i>SOUTH CAROLINA</i>	Battleship	12	45 Off. 1,000 E. M.	.....
<i>SOUTH DAKOTA</i>	Cruiser	12	30 Off. 1,870 E. M.	.....
<i>VERMONT</i>	Battleship	12	50 Off. 1,400 E. M.	.....
<i>VIRGINIA</i>	Battleship	12	50 Off. 1,200 E. M.	.....

LIST OF AMERICAN TRANSPORTS IN THE WORLD WAR (Continued)

Name	Owners	Operated and Manned by	Total Speed, knots D. W. per hour	Troops	Disposition	
NAVY VESSELS ASSIGNED AS TROOP TRANSPORTS FOR UNITED STATES COASTWISE SERVICE (TRANSFERRED FROM CROSS-CHANNEL SERVICE)						
CHARLES (Ex-Harvard)		Navy	1,277	22	900	Redelivered
NARRAGANSETT		Navy	1,000	18	800	Redelivered
NOPATIN		Navy	1,000	18	800	Redelivered
YALE (Ex-Manhattan)		Navy	1,277	20	900	Redelivered
NAVY VESSELS USED AS HOSPITAL SHIPS						
COMFORT		Navy	4,500	16.5	400 sick	Trans. to Atlantic Fleet
MERCY		Navy	4,600	15.5	387 sick	Trans. to Atlantic Fleet
ASSIGNED FOREIGN TROOP TRANSPORTS						
ARGENTINA	Italian Government	Italians	....	..	12 Off. 1,500 E. M.	.....
BELVEDERE	Italian Government	Italians	....	..	42 Off. 1,300 E. M.	.....
FRANCESCA	Italian Government	Italians	....	..	....	.....
PRESIDENT WILSON	Italian Government	Italians	....	..	170 Off. 1,700 E. M.	.....
NIEUW AMSTERDAM	Dutch Government	Dutch	....	..	200 Off. 2,000 E. M.	.....

LIST OF AMERICAN TRANSPORTS IN THE WORLD WAR (Continued)

Name	Owners	Operated and Manned by	Total Speed, knots per hour	Troops	Disposition
NOORDAM	Dutch Government	Dutch	....	1,700 (Est.)	.....
ROTTERDAM	Dutch Government	Dutch	....	100 Off. 2,200 E. M.	.....
LA LORRAINE	French Government	French	....	....	.....
LEOPOLDINA	French Government	French	....	....	.....
MADONNA	French Government	French	....	....	.....
ROCHAMBEAU	French Government	French	....	....	.....
CARGO TRANSPORTS IN SERVICE					
A. A. RAVEN	American Transportation Co.	Army	5,300	9	Sunk
ABANGAREZ	United Fruit Co.	Owners	4,600	25 Off. 72 E. M.	Redelivered
ABSAROKA	U. S. S. B.	Navy	8,521	....	Redelivered
ABSECON	U. S. S. B.	Owners	5,486	....	Redelivered
ACCOMAC	U. S. S. B.	Owners	8,550	3 Off. 33 E. M.	Redelivered
ACHILLES	Panama Railroad Co.	Owners	14,270	....	Redelivered
AGWIDALE	U. S. S. B.	Navy	7,200	11	Redelivered
AIKOKU MARU	Japanese	Owners	4,720	8	Redelivered
ALKAHID	Dutch	U. S. S. B.	5,200	8	Redelivered
ALLAGUASH	Foreign T. & M. Corp.	Owners	6,730	8	Redelivered
ALLOWAY	U. S. S. B.	Owners	9,246	1 Off. 1 E. M.	Redelivered
AMELAND	Dutch	U. S. S. B.	6,293	10	Redelivered

LIST OF AMERICAN TRANSPORTS IN THE WORLD WAR (Continued)

Name	Owners	Operated and Manned by	Total Speed, knots per hour	Troops	Disposition	
AMERICAN	American-Hawaiian Steamship Co.	Navy	7,850	10	....	Redelivered
AMPETCO	U. S. S. B.	Owners	11,350	10.5	....	Redelivered
ANACORTES	U. S. S. B.	Owners	7,500	10.5	3 Off.	Redelivered
ANTILLA	N. Y. & Cuba Mail Steamship Co.	Navy	5,144	11	3 E. M.	Redelivered
ANTILLES	Southern Pacific Co.	Navy	4,350	15	....	Sunk
APPELES (Ex-Elsass)	U. S. S. B.	Owners	11,220	12.5	....	Redelivered
ARAKAN	Dutch	U. S. S. B.	8,500	11	2 Off.	Redelivered
ARGONNE	Argonne Steamship Co.	Navy	8,970	10.5	89 E. M.	Redelivered
ARUNDO	Dutch	Owners	5,600	8.5	....	Redelivered
ASCUTNEY (Ex-Pisa)	U. S. S. B.	Owners	6,450	12	....	Redelivered
ATENAS	United Fruit Co.	Owners	4,600	12.5	101 Off.	Redelivered
AVARE	Brazilian Government	Owners	8,500	12	7 E. M.	Redelivered
AVONDALE	U. S. S. B.	Owners	8,974	10.5	1 Off.	Automatically released
AWA MARU	Japanese	Owners	8,070	11.5	22 E. M.	Redelivered
AURORA	U. S. S. B.	Owners	4,000	10	42 Off.	Redelivered
BALI	Dutch	Navy	9,805	11.5	481 E. M.	Redelivered
					....	Redelivered
					6 Off.	Redelivered

LIST OF AMERICAN TRANSPORTS IN THE WORLD WAR (Continued)

Name	Owners	Operated and Manned by	Total Speed, knots D. W. per hour	Troops	Disposition
BANTU	U. S. Steel Prod. Co.	Owners	6,568	10	Redelivered
BARENDRECHT	Dutch	U. S. S. B.	5,100	10.5	Redelivered
BATAJAN	Dutch	Navy	9,700	11.5	Redelivered
BAVARIA	Cuban	U. S. S. B.	5,900	10	Redelivered
BAYAMO	N. Y. & Cuban Steamship Co.	Owners	4,576	12	Redelivered
BEATRICE	A. H. Bull Steam- ship Co.	Owners	5,163	10	Redelivered
BELLATRIX	Dutch	U. S. S. B.	6,020	9	Redelivered
BERWIND	N. Y. & Porto Rico Steamship Co.	Army	3,400	9.5	Sunk
BERWYN	U. S. S. B.	Navy	7,400	10	Redelivered
BEUKELSDIJK	Dutch	Navy	10,530	9	Redelivered
BIRAN	U. S. S. B.	Owners	5,025	10	Redelivered
BORINQUEN	Battery Steamship Corp.	Army	4,200	8	Redelivered
BRANDYWINE	U. S. S. B.	Owners	7,000	10.5	Redelivered
BREMERTON	U. S. S. B.	Owners	7,500	15 Off. 7 E. M.	Redelivered
BRISTOL	Coastwise Transporta- tion Co.	Owners	7,000	11	Redelivered
BUENAVENTURA	U. S. Steel Prod. Co.	Navy	8,200	10	Sunk
BUITENZORG	Dutch	Navy	10,297	10.5	Redelivered
BUSSUM	Dutch	U. S. S. B.	6,100	9.5	Redelivered
BYLAYL	Pocahontas Fuel Co., Inc.	Owners	5,544	10.5	Redelivered
CACIQUE	Grace Steamship Co.	Navy	9,400	10.5	Redelivered

LIST OF AMERICAN TRANSPORTS IN THE WORLD WAR (Continued)

Name	Owners	Operated and Manned by	Total Speed, knots D. W. per hour	Troops	Disposition
CÆSAR	Navy	Navy	3,250	8	Automatically released
CALIFORNIAN	American-Hawaiian Steamship Co.	Navy	9,000	10	Sunk en route to France
CANIBAS	U. S. S. B.	Navy	9,970	11	Redelivered
(Ex-Sagadahoc)				3 Off.	
CANOVA	U. S. S. B.	Owners	8,548	10.5	Redelivered
CAPE HENRY	U. S. S. B.	Navy	7,371	11	Redelivered
CAPE LOOKOUT	U. S. S. B.	Navy	7,400	11	Redelivered
CAPE ROMAINE	U. S. S. B.	Navy	7,371	11	Redelivered
CARIB	Clyde Steamship Co., Inc.	Navy	3,000	9	Redelivered
CARRILLO	United Fruit Co.	Navy	4,400	12.5	Redelivered
CARTAGO	United Fruit Co.	Owners	4,600	12.5	Redelivered
CASCO	U. S. S. B.	Navy	7,900	11	Redelivered
(Ex-Elmshorn)				42 Off.	
CAUTO	N. Y. & Cuba Mail Steamship Co.	Navy	4,970	12	Redelivered
CELEBES	Dutch	Navy	8,955	10	Redelivered
CEYLON MARU	Japanese	Owners	6,440	9	Redelivered
CHARLTON HALL	U. S. Steel Prod. Co.	Navy	7,830	10	Redelivered
CHATTANOOCHEE	U. S. Government	Navy	12,320	12	Sunk
(Ex-Sachsen)				1 Off.	
CHATHAM	A. H. Bull Steam- ship Co.	Navy	5,100	10	Redelivered
(Ex-Margaret)				....
CHEBAULIP	U. S. S. B.	Navy	7,413	9	Redelivered

LIST OF AMERICAN TRANSPORTS IN THE WORLD WAR (Continued)

Name	Owners	Operated and Manned by		Total Speed, knots D. W. per hour	Troops	Disposition
		Owners	Manned by			
CHEROKEE	Clyde Steamship Co.	Owners	2,836	10.5	....	Redelivered
CHINAMPA (Ex-Cushing)	Standard Oil Co.	Navy	9,000	10	2 Off. 20 E. M. 6 Off.	Redelivered
CHINCHA	Nafra Company	U. S. S. B.	9,650	11	3 E. M.	Redelivered
CITY OF ATLANTA	Ocean Steamship Co.	Army	5,000	12	....	Redelivered
CITY OF SAVANNAH	Ocean Steamship Co.	Army	5,100	12	....	Redelivered
CLARE	A. H. Bull Steamship Co.	Navy	5,146	10	....	Redelivered
COASTWISE	Coastwise Transportation Co.	U. S. S. B.	7,000	10.5	....	Redelivered
COHASSET	U. S. S. B.	Navy	8,500	10.5	7 E. M.	Redelivered
COL. E. L. DRAKE	Standard Oil Co.	Owners	6,000	11	....	Redelivered
CONSTANTIA	Cuban	U. S. S. B.	4,600	11	....	Redelivered
CORNELIA	A. H. Bull Steamship Co.	Owners	4,644	12	....	Redelivered
CORONADO	U. S. S. B.	Owners	9,400	10	....	Redelivered
COROZAL	N. Y. & Porto Rico Steamship Co.	U. S. S. B.	4,650	10	....	Redelivered
COURAGEOUS	U. S. S. B.	Owners	11,800	11	....	Redelivered
CRANENEST	U. S. S. B.	Owners	3,364	9.5	....	Redelivered
CRASTER HALL	U. S. Steel Prod. Co.	Navy	7,300	10	....	Redelivered
CUBORE	Oregon Steamship Corp.	Owners	11,668	10	....	Sunk
DANIA	Danish	Owners	5,350	9	....	Redelivered
DEEPWATER	U. S. S. B.	Owners	12,370	10.5	....	Redelivered
DEERFIELD	U. S. S. B.	Owners	10,000	10.5	....	Redelivered

LIST OF AMERICAN TRANSPORTS IN THE WORLD WAR (Continued)

Name	Owners	Operated and Manned by	Total Speed, knots per hour	Troops	Disposition
DERANOF	U. S. S. B.	Owners	7,500	....	Redelivered
DIRIGO	U. S. S. B.	Owners	9,500	....	Redelivered
DORA	U. S. S. B.	U. S. S. B.	10,575	....	Sunk
DRECHTERLAND	Dutch	Navy	6,230	....	Redelivered
DUBHE	Dutch	U. S. S. B.	5,600	....	Redelivered
DURHAM	Sherman Steamship Co.	Navy	6,700	....	Redelivered
(Ex-Sherman)					
EASTERNER	U. S. S. B.	Navy	9,079	....	Redelivered
(Ex-Eifuko Maru)					
EASTERN CHIEF	U. S. S. B.	Navy	6,771	....	Redelivered
EASTERN KING	U. S. S. B.	Owners	4,924	....	Redelivered
EASTERN QUEEN	U. S. S. B.	Navy	9,062	....	Redelivered
EASTERN SEA	U. S. S. B.	Owners	9,027	....	Redelivered
EASTERN STAR	U. S. S. B.	Owners	6,699	....	Redelivered
EASTWIND	U. S. S. B.	Owners	9,094	....	Redelivered
EDITH	A. H. Bull Steamship Co.	Navy	5,146	....	Redelivered
EDWARD PIERCE	Crowell & Thurlow Steamship Co.	Owners	7,200	....	Redelivered
EL CAPITAN	Southern Pacific Railway Co.	Navy	7,325	....	Redelivered
ELINOR	U. S. S. B.	Navy	7,000	....	Redelivered
EL OCCIDENTE	Southern Pacific Railway Co.	Navy	6,850	....	Redelivered
ENGLEWOOD	U. S. S. B.	Owners	7,300	....	Redelivered
ERNY	U. S. Government	U. S. S. B.	8,321	....	Redelivered

LIST OF AMERICAN TRANSPORTS IN THE WORLD WAR (Continued)

Name	Owners	Operated and Manned by	Total Speed, knots D. W. per hour	Troops	Disposition
EVERETT	New England Fuel & Transportation Co.	Owners	8,000	10	Redelivered
FAIRMONT	Coastwise Transport- ation Co.	Navy	8,753	10	Redelivered
FEDERAL	U. S. S. B.	Navy	9,600	10	Redelivered
FELIX TAUSSIG	Crowell & Thurlow Steamship Co.	Navy	9,500	10	Redelivered
FELTORE	Oregon Steamship Co.	Owners	11,688	10	Redelivered
FIRMORE	Oregon Steamship Co.	Owners	11,669	9.5	Redelivered
FLINT	Norwegian	Owners	7,000	9	Redelivered
FLORENCE LUCKENBACH	Luckenbach Co., Inc.	Army	8,288	11	Redelivered
FRANCIS L. SKINNER	Skinner Syndicate Co.	U. S. S. B.	6,900	9	Redelivered
FRANKLIN	Coastwise Transport- ation Co.	Owners	8,750	10.5	Redelivered
FREEMAN	Pocahontas Naviga- tion Co.	Owners	5,598	10.5	Redelivered
FRESNO	U. S. S. B.	Navy	9,330	9	Redelivered
FRIEDA	Union Sulphur Co.	Navy	5,764	11	Redelivered
GALESBURG	U. S. S. B.	Owners	7,327	10.5	Redelivered
GEN. O. H. ERNST (Ex-Sachsenwald)	Panama Railroad Co.	Owners	5,380	12	Redelivered

LIST OF AMERICAN TRANSPORTS IN THE WORLD WAR (Continued)

Name	Owners	Operated and Manned by	Total Speed, knots per hour	Troops	Disposition	
GEN. H. F. HODGES (Ex-Savoia)	Panama Railroad Co.	Owners	4,665	10.8	....	Redelivered
GEORGE G. HENRY	Pan-American Petroleum & Transportation Co.	Navy	10,200	11	....	Redelivered
GLEN WHITE	Castner, Curran & Bullitt	Navy	8,619	10.5	....	Redelivered
GOOILAND	Dutch	U. S. S. B.	6,600	11	....	Redelivered
GORONTALO	Dutch	Navy	9,180	9	....	Redelivered
GORREDIJK	Dutch	U. S. S. B.	9,090	10.5	....	Redelivered
GUANTANAMO	N. Y. & Cuba Mail Steamship Co.	Navy	5,060	11	....	Redelivered
GULF MAID	Gulf Refining Co.	Owners	7,305	11.5	....	Redelivered
HAMPDEN	Coastwise Transportation Co.	Owners	8,000	10.5	....	Redelivered
HARRY LUCKENBACH	Luckenbach Co., Inc.	Army	4,200	9	....	Sunk
HATTERAS	U. S. S. B.	Navy	7,467	10	....	Redelivered
HAWAIIAN	American-Hawaiian Steamship Co.	Navy	7,850	10	....	Redelivered
HELEN	A. H. Bull Steamship Co.	Owners	4,644	12	....	Redelivered
HEREDIA	United Fruit Co.	Owners	4,600	12.5	....	Redelivered
HERMAN FRASCH	Union Sulphur Co.	Navy	6,180	10.5	....	Sunk
HEWITT	Union Sulphur Co.	Army	8,643	10	....	Redelivered
HICKMAN	U. S. S. B.	Owners	7,300	10.5	40 E. M.	Redelivered
H. M. WHITNEY	Acme Operating Co.	U. S. S. B.	2,000	14.5	....	Redelivered

LIST OF AMERICAN TRANSPORTS IN THE WORLD WAR (Continued)

Name	Owners	Operated and Manned by	Total D. W.	Speed, knots per hour	Troops	Disposition
HONOLULU (Ex-Itasca)	U. S. Government	U. S. S. B.	7,500	12	....	Redelivered
HOWICK HALL	U. S. Steel Prod. Co.	Navy	8,097	10	....	Redelivered
HWAH JAH	Chinese	Owners	8,160	9	....	Redelivered
HWAH JIH	Chinese	Owners	7,360	9.5	....	Redelivered
ICE KING (Ex-Passaic)	U. S. S. B.	Navy	6,103	10.5	....	Redelivered
IDE MARU	Japanese	Owners	6,594	10	....	Redelivered
INDIANAPOLIS	U. S. S. B.	Navy	12,500	11	....	Redelivered
INDO MARU	Japanese	Owners	7,980	9	....	Redelivered
IRTYSH	Russian	U. S. S. B.	7,100	9	....	Redelivered
ISABELLA	N. Y. & Porto Rico Steamship Co.	Navy	4,650	10	....	Redelivered
JAVA MARU	Japanese	Owners	7,920	8.5	....	Redelivered
JEAN	A. H. Bull Steam- ship Co.	Navy	4,855	9.5	....	Redelivered
JEANETTE SKINNER	U. S. S. B.	Navy	8,660	11.5	....	Redelivered
JINSEN MARU	Japanese	Owners	5,530	9	....	Sunk
JOBSHAVEN	Dutch	U. S. S. B.	6,290	10	....	Redelivered
JOHN G. McCULLOUGH	J. F. Whitney & Co.	Navy	2,700	8	....	Sunk
JOSEPH CUDAHY	Frank J. Egan	Army	4,992	10	....	Sunk
JUPITER	Navy	Navy	12,213	12	....	Automatically released
KERESAN	Kerr Navigation Corp.	Navy	6,780	11	....	Redelivered
KERESASPA	Kerr Navigation Corp.	Navy	7,300	9	....	Redelivered

LIST OF AMERICAN TRANSPORTS IN THE WORLD WAR (Continued)

Name	Owners	Operated and Manned by	Total Speed, knots per hour	Troops	Disposition	
KERMANSHAH	Kerr Navigation Corp.	Navy	8,100	11	....	Redelivered
KIRIN MARU	Japanese	Owners	5,530	9	....	Redelivered
KOMAGATA MARU	Japanese	Owners	4,320	10	....	Redelivered
KUNAJIRI MARU	Japanese	Owners	6,300	8	....	Redelivered
LARENBERG	Dutch	U. S. S. B.	5,424	10	....	Redelivered
LENAPE	Clyde Steamship Co.	Navy			50 Off.	Redelivered
LIBERTY (Ex-Wichita)	U. S. S. B.	Navy	3,310	14	2,031 E. M. 9 Off.	Redelivered
LUCIA	U. S. Government	U. S. S. B.	9,600	11	39 E. M.	Redelivered
LUELLA	U. S. S. B.	Navy	9,000	13	....	Sunk
LYDIA	U. S. S. B.	Navy	5,612	10	2 Off.	Redelivered
(Ex-Szell-Kalman)		Navy	5,936	9.5	....	Redelivered
LYNCHBURG	U. S. S. B.	Owners	4,000	11	....	Redelivered
MAARTENSDIJK	Dutch	Navy	9,090	11.5	....	Redelivered
MAINE	U. S. S. B.	Owners	9,325	10.5	....	Redelivered
MALAY MARU	Japanese	Owners	7,100	9.5	....	Redelivered
MALDEN	New England Fuel & Transportation Co.	Owners			17 Off. 4 E. M.	Redelivered
MAUMEE	Foreign Transportation & Mercantile Corp.	Owners	4,250	7.9	2 Off. 102 E. M.	Redelivered
MEDINA	Mallory Steamship Co.	Army	7,000	14	....	Redelivered
MILDERSKIN	Norwegian	Owners	6,642	..	....	Redelivered

LIST OF AMERICAN TRANSPORTS IN THE WORLD WAR (Continued)

Name	Owners	Operated and Manned by	Total Speed, knots per hour	Troops	Disposition
MELROSE	New England Fuel & Transportation Co.	Owners	8,000 10	3 Off. 21 E. M.	Redelivered
MERAUKE	Dutch United Fruit Co.	Navy Owners	10,237 11	6 Off.	Redelivered
METAPAN	United Fruit Co.	Owners	12.5	30 Off. 84 E. M.	Redelivered
MIDDLESEX	Coastwise Transportation Co.	Navy	7,900 10.5	....	Redelivered
MIDDRECHT	Dutch	U. S. S. B.	4,595 12	....	Redelivered
MIRACH	Dutch	U. S. S. B.	6,293 10	....	Redelivered
M. J. SCANLON	U. S. S. B.	Owners	8,100 10.5	....	Redelivered
MOCCASIN	U. S. Government	Navy	4,630 13	55 E. M.	Redelivered
MOMUS	Southern Pacific Railway Co.	Owners	7,500 ..	....	Redelivered
MONTANAN	American-Hawaiian Steamship Co.	Navy	9,920 12	....	Sunk
MONTCLAIR	U. S. S. B.	Navy			
MONTICELLO	U. S. S. B.	Owners	6,100 10	5 Off. 5 E. M.	Redelivered
MONTOSO	N. Y. & Porto Rico Steamship Co.	Army	9,000 11	....	Redelivered
MORRISTOWN	U. S. S. B.	Navy	4,650 10	4 Off. 40 E. M.	Redelivered
MOUNT SHASTA	U. S. S. B.	Navy	7,300 10.5	....	Redelivered
(Ex-Sagaland)	U. S. S. B.	Navy	7,200 10.5	....	Redelivered
MUNALBRO	Munson Steamship Line	Navy	7,100 9.5	....	Redelivered

LIST OF AMERICAN TRANSPORTS IN THE WORLD WAR (Continued)

Name	Owners	Operated and Manned by	Total Speed, knots D. W. per hour	Troops	Disposition	
MUNAIRES	Munson Steam- ship Line	Navy	7,550	11	....	Redelivered
MUNDALE	Munson Steam- ship Line	Owners	5,250	9	....	Redelivered
MUNDELTA	Mundelta Steam- ship Corp.	Navy	7,700	11.5	....	Redelivered
MUNINDIES	Munson Steam- ship Line	Navy	7,550	11	....	Redelivered
MUNPLACE	Munson Steam- ship Line	Navy	5,250	10	....	Redelivered
MUNRIO	Munson Steam- ship Line	Navy	6,400	11	....	Redelivered
MUNSOMO	Munson Steam- ship Line	Navy	5,250	10	....	Redelivered
MUNWOOD	Munson Steam- ship Line	Navy	5,400	11.5	....	Redelivered
MUSCATINE	U. S. S. B.	Navy			2 Off. 2 E. M.	Redelivered
MYOGISAN MARU NAIWA	Japanese U. S. S. B.	Owners Navy	6,103 4,623	10 7.5	.... 1 Off.	Redelivered Redelivered
NANTAHALA NANTASKET	U. S. S. B. U. S. S. B.	Navy Owners	8,800 8,800	10.5 11	.... 15 E. M.	Redelivered Redelivered
NECHES	Mallory Steamship Co.	Army	8,500	10.5	10 Off. 28 E. M.	Sunk
NEPONSET	U. S. S. B.	Navy	10,000	10	....	Redelivered

LIST OF AMERICAN TRANSPORTS IN THE WORLD WAR (Continued)

Name	Owners	Operated and Manned by	Total Speed, knots D. W. per hour	Troops	Disposition
NEWBURGH	U. S. S. B.	Navy	9,000	11	Redelivered
NEWTON	New England Fuel & Transportation Co.	Navy	8,244	10	Redelivered
NIJNI NOVGOROD	Russian	U. S. S. B.	4,380	9	Redelivered
NORDEN	Danish	U. S. S. B.	4,717	8.5	Redelivered
NORFOLK	Coastwise Transportation Co.	Owners	5,700	2 Off. 20 E. M.	Redelivered
NORLINA	Garland Steamship Co.	Navy	7,320	9	Redelivered
NORTH POLE	U. S. S. B.	Navy	5,520	11.5	Redelivered
NYANZA (Ex-Epslinger)	U. S. Government	U. S. S. B.	7,800	10	Redelivered
OCLAND	Norwegian	Owners	5,300	1 Off.	Redelivered
OOSTDIJK	Dutch	U. S. S. B.	5,200	9	Redelivered
OOSTERDIJK	Dutch	Navy	11,927	13.5	Sunk
OPHIR	Dutch	Navy	7,000	13	Burned
OREGONIAN	American-Hawaiian Steamship Co.	Navy	7,850	10	Redelivered
ORION (Ex-Prinz Oskar)	U. S. Government	Navy	5,610	12	Automatically released
OSAGE (Ex-Serapis)	U. S. Government	U. S. S. B.	7,600	3 Off. 23 E. M.	Redelivered
OSKAWA	U. S. S. B.	Owners	8,048	3 Off. 29 E. M.	Redelivered
OSSINEKE	U. S. S. B.	Owners	8,800	1 Off. 22 E. M.	Redelivered

LIST OF AMERICAN TRANSPORTS IN THE WORLD WAR (Continued)

Name	Owners	Operated and Manned by	Total Speed, knots D. W. per hour	Troops	Disposition
O. T. WARING	U. S. S. B.	Owners	8,130	10.5	Redelivered
OZAMA	Clyde Steamship Co.	Navy	3,000	9	Redelivered
PANUCO	N. Y. & Cuba Steamship Co.	Navy	4,970	11	Redelivered
PASADENA	U. S. S. B.	Navy	9,330	11	Redelivered
PAULSBORO	Vacuum Oil Co.	Owners	11,000	10.5	Automatically released
PAWNEE (Ex-Harburg)	U. S. S. B.	Owners	6,850	11	Redelivered
PEARL SHELL	Shell Co.	Owners	8,400	10	Redelivered
PENANG MARU	Japanese	Owners	8,325	9	Redelivered
PEQUOT	U. S. S. B.	Navy	8,879	9	Redelivered
PERSIA MARU	Japanese	Owners	4,970	10	Redelivered
PIAVE	U. S. S. B.	Navy	9,600	11	Sunk
PLEIADES	Luckenbach Co., Inc.	Navy	6,300	9.5	Redelivered
PLYMOUTH	American-Italian Steamship Co.	Navy	8,600	10.5	Redelivered
POINT BONITA	U. S. S. B.	Navy	3,800	12	Redelivered
POINT JUDITH	U. S. S. B.	Owners	3,780	10	Redelivered
POINT LOBOS	U. S. S. B.	Navy	3,760	10	Redelivered
POLAR BEAR	U. S. S. B.	Navy	6,200	11.5	Redelivered
POLAR LAND	U. S. S. B.	Navy	6,200	11	Redelivered
POLAR SEA	U. S. S. B.	Navy	5,600	11	Redelivered
PROCYON	Dutch	U. S. S. B.	6,020	11	Redelivered

LIST OF AMERICAN TRANSPORTS IN THE WORLD WAR (Continued)

Name	Owners	Operated and Manned by	Total Speed, knots per hour	Troops	Disposition
RANGOON MARU	Japanese	Owners	8,350	....	Redelivered
RAPPAHANNOCK (Ex-Pommern)	U. S. S. B.	Navy	12,670	....	Automatically released
REGULUS	Norwegian	U. S. S. B.	6,935	....	Redelivered
RIJNDIJK	Dutch	U. S. S. B.	6,000	....	Redelivered
RIJNLAND	Dutch	Navy	6,490	....	Redelivered
R. M. THOMPSON	American Transportation Co.	Navy	4,000	....	Redelivered
ROEPAT	Dutch	Navy	10,397	....	Redelivered
ROMAN	U. S. S. B.	Owners	4,000	....	Redelivered
RONDO	Dutch	Navy	10,460	....	Redelivered
RUTH	A. H. Bull Steamship Co.	Owners	4,955	....	Redelivered
SÆTIA	U. S. S. B.	Navy	5,025	....	Sunk
SAGADAHOC	U. S. S. B.	Navy		1 Off.	Redelivered
SAGUA	Atlantic Fruit Co.	Army	9,970	4 E. M.	Redelivered
SAINTE FRANCIS	U. S. Steel Prod. Co.	Navy	3,500	3 Off.	Redelivered
SAMARINDA	Dutch	Navy	8,350	....	Redelivered
SAMLAND	Belgian	Owners	10,332	....	Redelivered
SANGSTADT	Danish	Owners	8,500	....	Redelivered
SAN JACINTO	Mallory Steamship Co.	Army	4,175	....	Redelivered
			4,950	....	Redelivered
SANTA CRUZ	Atlantic-Pacific Mail Steamship Co.	Owners	6,540	....	Redelivered
SANTA LUISA	Grace Steamship Co.	Navy	4,986	....	Redelivered

LIST OF AMERICAN TRANSPORTS IN THE WORLD WAR (Continued)

Name	Owners	Operated and Manned by		Total Speed, knots D. W. per hour	Troops	Disposition
		Owners	Manned by			
SANTA MARTA	United Fruit Co.	Owners	Owners	4,600	45 Off. 53 E. M.	Redelivered
SANTA ROSALIA	U. S. Steel Prod. Co.	Navy	Navy	8,715	10	Redelivered
SANTORE	Oregon Steamship Corp.	Owners	Owners	11,539	9.5	Redelivered
SARK	Norwegian	Owners	Owners	6,080	9.5	Redelivered
SATSUMA	Barber & Company	Navy	Navy	8,091	9	Redelivered
SAXON	U. S. S. B.	Owners	Owners	4,000	9	Redelivered
SEIYO MARU	Japanese	Owners	Owners	10,270	14.5	Redelivered
SEVERANCE	Union Sulphur Co.	Navy	Navy	7,900	10	Redelivered
SEWELL'S POINT	U. S. S. B.	Owners	Owners		4 Off. 21 E. M.	Redelivered
SHINSEI MARU	Japanese	Owners	Owners	8,681	10.5	Redelivered
SHOSHONE	Shoshone Navigation Co.	Navy	Navy	6,820	9	Redelivered
SILVER SHELL	Shell Co.	Owners	Owners	8,400	10	Redelivered
SILOUX	Atlantic, Gulf & West Indies Steamship Line	Navy	Navy	3,000	9	Redelivered
SIXAOLA	United Fruit Co.	Army	Army	4,400	12	Redelivered
SLIEDRECHT	Dutch	Owners	Owners	5,230	10	Redelivered
SOCONY	Standard Transportation Co.	Owners	Owners	5,075	8	Redelivered
SOESDIJK	Dutch	Navy	Navy	8,970	11.5	Redelivered
SOUTH POLE	U. S. S. B.	Navy	Navy	5,520	11	Redelivered
STEINSTADT	Danish	Owners	Owners	4,175	9	Redelivered

LIST OF AMERICAN TRANSPORTS IN THE WORLD WAR (Continued)

Name	Owners	Operated and Manned by	Total Speed, knots per hour	Troops	Disposition	
STEPHEN R. JONES	Crowell & Thurlow Steamship Co.	Navy	7,200	10	....	Redelivered
STRINDA	Norwegian	Owners	11,185	10	....	Redelivered
SUDBURY	Shawmut Steamship Co.	Navy	7,500	10	....	Redelivered
SUFFOLK	Coastwise Transportation Co.	Owners	8,000	9.5	....	Redelivered
SURINAM	United Fruit Co.	Owners	3,455	12.5	36 Off. 12 E. M.	Redelivered
SUTHERLAND	U. S. S. B.	Owners	7,432	10.5	....	Redelivered
SYERRE	Norwegian	Owners	5,950	9.5	....	Redelivered
TABOR	Norwegian	Owners	6,100	9	6 Off.	Redelivered
TANAMO	Atlantic Fruit Co.	Navy	3,500	12	....	Redelivered
TERESA	U. S. S. B.	Navy	5,700	8.5	....	Redelivered
TERNATE	Dutch	Navy	8,994	9	....	Redelivered
TEXAS	Danish	Owners	6,900	..	....	Redelivered
THELMA	Norwegian	Owners	2,180	9.5	....	Redelivered
THOR GERD	Norwegian	Owners	4,210	..	....	Redelivered
THUBAN	Dutch	Owners	6,020	8	....	Redelivered
TICONDEROGA (Ex-Camilla Rickmers)	U. S. Government	Navy	7,182	9.5	....	Sunk
TIMES	Norwegian	Owners	3,550	..	....	Redelivered
TIPPECANOE (Ex-Holsatia)	U. S. Government	U. S. S. B.	9,000	..	....	Sunk
TIVIVES	United Fruit Co.	Navy	4,400	12.5	44 Off. 15 E. M.	Redelivered
TJIKEMBADG	Dutch	Navy	11,086	11.5	....	Redelivered

LIST OF AMERICAN TRANSPORTS IN THE WORLD WAR (Continued)

Name	Owners	Operated and Manned by	Total Speed, knots per hour	Troops	Disposition
<i>TJISONDARI</i>	Dutch	Navy	11,086	....	Redelivered
<i>TORDENSKJOLD</i>	Norwegian	Owners	6,100	....	Redelivered
<i>TOSA MARU</i>	Japanese	Owners	7,680	....	Redelivered
<i>TOTTORI MARU</i>	Japanese	Owners	9,660	....	Redelivered
<i>TRANSPORTATION</i>	Coastwise Transportation Co.	Owners	7,000	....	Redelivered
<i>TYR</i>	Norwegian	Owners	3,500	....	Redelivered
<i>TSURUGISAN MARU</i>	Japanese	Owners	6,176	....	Redelivered
<i>TUCKAHOE</i>	U. S. S. B.	Owners	5,500	....	Redelivered
<i>TUNGUS</i>	Norwegian	Owners	2,340	....	Redelivered
<i>TURRIALBA</i>	United Fruit Co.	Owners	4,600	96 Off. 96 E. M.	Redelivered
<i>ULYSSES</i>	Panama Railroad Co.	Owners	14,270	10 Off. 2,673 E. M.	Redelivered
<i>VEENDIJK</i>	Dutch	Navy	10,550	12	Redelivered
<i>VENEZUELA</i>	Pacific Mail Steamship Co.	Owners	5,760	12	Redelivered
<i>VITTORIO EMMANUEL III</i>	U. S. S. B.	Navy	7,393	10.5	Redelivered
<i>WAALHAVEN</i>	Dutch	U. S. S. B.	6,293	9	Redelivered
<i>WABASH</i>	U. S. S. B.	Navy	6,775	9.5	Redelivered
<i>WACHUSETTS</i>	U. S. Government	Navy	6,160	10	Redelivered
<i>WALTER D. MUNSON</i>	U. S. S. B.	Navy	5,697	12	Redelivered
<i>WALTER D. NOYES</i>	Crowell & Thurlow Steamship Co.	Owners	7,200	8.5	Redelivered
<i>WAMPUM</i>	U. S. S. B.	Owners	8,340	4 Off. 20 E. M.	Redelivered
<i>WASSAIC</i>	U. S. S. B.	Navy	8,800	12 E. M.	Redelivered

LIST OF AMERICAN TRANSPORTS IN THE WORLD WAR (Continued)

Name	Owners	Operated and Manned by	Total D. W.	Speed, knots per hour	Troops	Disposition
WAUKESHA	U. S. S. B.	Owners	3,863	10	....	Redelivered
WEST APQUIM	U. S. S. B.	Navy	8,516	10.5	2 Off.	Redelivered
WEST ARROW	U. S. S. B.	Owners	8,800	10	23 E. M.	Redelivered
WESTBORO	U. S. S. B.	Owners			9 Off.	Redelivered
WEST BROOK	U. S. S. B.	Owners	8,556	10.5	18 E. M.	Redelivered
WEST CARUTH	U. S. S. B.	Owners	8,640	9.5	1 Off.	Redelivered
WEST CAVANAL	U. S. S. B.	Owners	8,800	10.5	....	Redelivered
WESTCHESTER	U. S. S. B.	Owners	8,800	10.5	....	Redelivered
WEST COAST	U. S. S. B.	Navy	8,800	10.5	1 Off.	Redelivered
WEST COHAS	U. S. S. B.	Navy	8,842	10	1 Off.	Redelivered
WEST DUFFEE	U. S. S. B.	Navy	8,554	11.5	....	Redelivered
	U. S. S. B.	Owners			3 Off.	Redelivered
WEST EAGLE	U. S. S. B.	Owners	8,592	10.5	30 E. M.	Redelivered
					1 Off.	
					14 E. M.	
WEST ELCASCO	U. S. S. B.	Owners	8,688	10.5	....	Redelivered
WEST ELDARA	U. S. S. B.	Navy	8,568	10.5	....	Redelivered
WESTERDIJK	Dutch	Navy	8,560	11.5	....	Redelivered
WESTERNER	U. S. S. B.	Navy	11,927	13.5	....	Redelivered
					6 Off.	
WESTERN CHIEF	U. S. S. B.	Navy	8,607	10.5	8 E. M.	Redelivered
WESTERN FRONT	U. S. S. B.	Navy	8,800	10	....	Redelivered
(Ex-Indiana)	U. S. S. B.	Navy	8,613	11	40 E. M.	Redelivered
WESTERN HERO	U. S. S. B.	Owners	8,571	10.5	....	Redelivered
(Ex-Seattle)						
WESTERN HOPE	U. S. S. B.	Navy	8,792	10.5	....	Redelivered
WESTERN LIGHT	U. S. S. B.	Navy	8,594	12.5	....	Redelivered

LIST OF AMERICAN TRANSPORTS IN THE WORLD WAR (Continued)

Name	Owners	Operated and Manned by	Total D. W.	Speed, knots per hour	Troops	Disposition
WESTERN MAID	U. S. S. B.	Navy	8,594	12	....	Redelivered
WESTERN OCEAN	U. S. S. B.	Navy	8,800	10	....	Redelivered
WESTERN PLAINS	U. S. S. B.	Navy	8,842	11.5	....	Redelivered
WESTERN SCOUT	U. S. S. B.	Owners	8,500	10	....	Redelivered
WESTERN SEA	U. S. S. B.	Navy	8,556	10.5	....	Redelivered
WESTERN SPIRIT	U. S. S. B.	Navy	8,800	12.5	....	Redelivered
WESTFORD	U. S. S. B.	Navy	8,557	10.5	....	Redelivered
WEST GALETA	U. S. S. B.	Navy	8,800	11	....	Redelivered
WEST GALOC	U. S. S. B.	Navy	8,340	10.5	....	Redelivered
WEST GATE	U. S. S. B.	Navy	8,717	10.5	....	Sunk
WEST GATOMSKA	U. S. S. B.	Navy	8,586	10.5	....	Redelivered
WEST GROVE	U. S. S. B.	Owners	8,680	10.5	....	Redelivered
WEST HAMPTON	U. S. S. B.	Owners	8,800	10	....	Redelivered
WEST HAVEN	U. S. S. B.	Navy	8,619	11.5	....	Redelivered
WEST HOBOMAC	U. S. S. B.	Navy	8,604	11.5	....	Redelivered
WEST HOSOKIE	U. S. S. B.	Navy	8,551	10.5	....	Redelivered
WEST KYSKA (Ex-West Yaquim)	U. S. S. B.	Navy	8,800	11.5	....	Redelivered
WESTLAKE	U. S. S. B.	Owners	8,548	10.5	....	Redelivered
WESTLAND (Ex-Landaas)	U. S. S. B.	Owners	8,800	10.5	....	Redelivered
WEST LASHAWAY	U. S. S. B.	Navy	8,578	10	....	Redelivered
WEST LIANGA	U. S. S. B.	Navy	8,543	10.5	....	Redelivered
WEST MADAKET	U. S. S. B.	Navy	8,573	11.5	....	Redelivered
WEST MAHOMET	U. S. S. B.	Navy	8,573	11.5	....	Redelivered
WEST MEAD	U. S. S. B.	Navy	8,600	10.5	....	Redelivered

LIST OF AMERICAN TRANSPORTS IN THE WORLD WAR (Continued)

Name	Owners	Operated and Manned by	Total Speed, knots D. W. per hour	Troops	Disposition
WEST MOUNT	U. S. S. B.	Navy	8,682	....	Redelivered
WESTOVER	U. S. S. B.	Navy	8,561	....	Sunk
WEST POINT (Ex- <i>War Leopard</i>)	U. S. S. B.	Navy	8,596	....	Redelivered
WESTPORT	U. S. S. B.	Navy	8,800	....	Redelivered
WEST SHORE	U. S. S. B.	Owners	8,800	....	Redelivered
WEST VIEW	U. S. S. B.	Owners	8,800	....	Redelivered
WESTWARD HO	U. S. S. B.	Navy	8,700	10.5	Redelivered
WESTWOOD	U. S. S. B.	Navy	8,707	....	Redelivered
WIELDRECHT	Dutch	Navy	4,750	8.5	Redelivered
WILLIAM A. MCKENNEY	Crowell & Thurlow Steamship Co.	Navy	9,500	....	Redelivered
WILLIMANTIC	U. S. S. B.	Navy	7,603	....	Redelivered
WILLIAM N. PAGE	U. S. S. B.	Navy	8,684	....	Redelivered
WINDING GULF	U. S. S. B.	Navy	8,619	....	Redelivered
WINNEBAGO	American Trans- atlantic Co.	Navy	7,230	....	Redelivered
WINTERSWIJK	Dutch	U. S. S. B.	5,440	....	Redelivered
W. L. STEED	U. S. S. B.	Owners	9,100	....	Redelivered
WOONSOCKET (Ex- <i>Rhode Island</i>)	U. S. S. B.	Owners	9,425	....	Redelivered
WOUDRICHEM	Dutch	U. S. S. B.	5,375	....	Redelivered
WYANDOTTE	U. S. S. B.	Owners	5,900	....	Redelivered
YAQUINA	U. S. S. B.	Owners	9,400	....	Redelivered
YELLOWSTONE	U. S. S. B.	Navy	9,410	....	Redelivered
YOSEMITE	U. S. S. B.	Owners	9,410	....	Redelivered
YSELHAVEN	Dutch	U. S. S. B.	6,293	....	Redelivered

LIST OF AMERICAN TRANSPORTS IN THE WORLD WAR (Continued)

Name	Owners	Operated and Manned by	Total Speed, knots D. W. per hour	Troops	Disposition
YUKON	U. S. S. B.	Owners	7,506	10,5	Redelivered
ZAAKLAND	Dutch	Navy	6,490	10	Sunk
ZACAPA	United Fruit Co.	Owners	4,600	12.5	Redelivered
ZUIDERDIJK	Dutch	Navy	8,075	9	Redelivered
VESSELS IN CROSS-CHANNEL SERVICE					
AUSABLE	Foreign Transportation Corp.	Navy	5,250	8.5	Redelivered
BELLA	U. S. Navy	Navy	1,165	..	.....
CAROLINIAN	Garland Steamship Corp.	Navy	6,975	9	Redelivered
DEMOCRACY (Ex-Jupiter)	U. S. S. B.	Navy	7,115	10	Assigned to Food Administration at Rotterdam
FREDERICK LUCKENBACH	Luckenbach Co., Inc.	Navy	4,500	9.5	Redelivered
HILTON	A. H. Bull Steamship Co.	Navy	4,940	9.5	Redelivered
JAMES S. WHITNEY	Acme Operative Co.	U. S. S. B.	2,000	15	Redelivered
KERKENNA	Kerr Navigation Corp.	Navy	5,500	9	Redelivered
KERLEW (Ex-Virginia)	Kerr Navigation Corp.	Navy	4,805	12	Redelivered
KERMOOR (Ex-Morawitz)	Kerr Navigation Corp.	Navy	6,980	11	Redelivered
KEROWLEE	Kerr Navigation Corp.	Navy	6,100	9	Assigned to Food Administration at Rotterdam

LIST OF AMERICAN TRANSPORTS IN THE WORLD WAR (Continued)

Name	Owners	Operated and Manned by	Total Speed, knots D. W. per hour	Troops	Disposition
KERWOOD	Kerr Navigation Corp.	Navy	5,350	11	Redelivered
LAKE ARTHUR	U. S. S. B.	Navy	2,875	9.5	Redelivered
LAKE BENBOW	U. S. S. B.	Navy	3,530	9.5	Redelivered
LAKE BERDAN	U. S. S. B.	Navy	3,530	9.5	Redelivered
LAKE BLANCHESTER	U. S. S. B.	Navy	3,530	10	Redelivered
LAKE BLOOMINGTON	U. S. S. B.	Navy	3,530	9.5	Aground at Point La Courre
LAKE BORGNE	U. S. S. B.	Navy	3,500	9.5	Sunk
LAKE CAPENS	U. S. S. B.	Navy	2,875	9.5	Redelivered
LAKE CATHERINE	U. S. S. B.	Navy	2,930	10	Assigned to Food Administration at Rotterdam
LAKE CHARLOTTE	U. S. S. B.	Navy	3,293	10	Redelivered
LAKE CLEAR	U. S. S. B.	Navy	2,875	9.5	Assigned to Food Administration at Rotterdam
LAKE CONESUS	U. S. S. B.	Navy	3,305	9.5	Redelivered
LAKE CRESCENT	U. S. S. B.	Navy	2,875	9.5	Redelivered
LAKE DAMITA	U. S. S. B.	Navy	3,530	10	Aground near Brest
LAKE DANCEY	U. S. S. B.	Navy	3,530	9.5	Assigned to Food Administration at Rotterdam
LAKE DARAGA	U. S. S. B.	Navy	3,530	9.5	.....
LAKE DUNCAN	U. S. S. B.	Owners	3,530	9.5	Redelivered
LAKE DYMER	U. S. S. B.	Navy	3,530	9.5	Redelivered to Navy
LAKE ECKHART	U. S. S. B.	Navy	3,530	9.5	Assigned to Food Administration at Rotterdam
LAKE EDON	U. S. S. B.	Army	3,530	9.5	Sunk
LAKE ELIKO	U. S. S. B.	Navy	3,520	9.5	Redelivered
LAKE ELIZABETH	U. S. S. B.	Navy	3,320	8.5	Assigned to Red Cross

LIST OF AMERICAN TRANSPORTS IN THE WORLD WAR (Continued)

Name	Owners	Operated and Manned by	Total Speed, knots D. W. per hour	Troops	Disposition
LAKE ELSINORE	U. S. S. B.	Navy	3,530	10 E. M.	Redelivered
LAKE FERNWOOD	U. S. S. B.	Navy	2,875	9.5	Redelivered
LAKE FRANCES	U. S. S. B.	Navy	2,930	10	Redelivered
LAKE GAKONA	U. S. S. B.	Navy	3,530	9.5	Redelivered
LAKE GARZA	U. S. S. B.	Navy	3,530	9.5	Redelivered
LAKE GASPER	U. S. S. B.	Navy	3,530	9.5	Redelivered
LAKE GEDNEY	U. S. S. B.	Navy	3,530	9.5	Redelivered
LAKE GENEVA	U. S. S. B.	Navy	3,100	9.5	Redelivered
LAKE GEORGE (Ex-Farragux)	U. S. S. B.	Army	4,185	9	Redelivered
LAKE HARNEY	U. S. S. B.	Navy	2,875	9.5	Redelivered
LAKE HARRIS	U. S. S. B.	Navy	3,293	10	Redelivered
LAKE HELEN	U. S. S. B.	Navy	3,100	10	Redelivered
LAKE JANET	U. S. S. B.	Owners	3,335	10	Redelivered
LAKE LARGA	U. S. S. B.	Navy	3,530	9.5	Redelivered
LAKE LASANG	U. S. S. B.	Navy	3,525	9.5	Redelivered
LAKE LEMANDO	U. S. S. B.	Navy	3,530	9.5	Redelivered
LAKE LILLIAN (Ex-War Raven)	U. S. S. B.	Navy	2,875	9.5	Redelivered
LAKE LINDEN	U. S. S. B.	Army	3,310	9	Redelivered
LAKE MARY	U. S. S. B.	Navy	3,305	10	Assigned to Food Adminis- tration at Rotterdam
LAKE OSWEYA	U. S. S. B.	Navy	3,500	9	Redelivered
LAKE OTISCO	U. S. S. B.	Navy	2,875	9.5	Redelivered
LAKE OWENS	U. S. S. B.	Army	3,270	9.5	Sunk
LAKE PEPIN	U. S. S. B.	Navy	3,015	9.5	Redelivered
LAKE PEWAUKEE	U. S. S. B.	Navy	3,268	10	Redelivered

LIST OF AMERICAN TRANSPORTS IN THE WORLD WAR (Continued)

Name	Owners	Operated and Manned by	Total Speed, knots D. W. per hour	Troops	Disposition
LAKE PLEASANT	U. S. S. B.	Navy	3,293	....	Redelivered
LAKE PORTAGE	U. S. S. B.	Owners	2,869	....	Sunk
LAKE SANFORD	U. S. S. B.	Owners	3,500	....	Redelivered
LAKE SHORE (Ex- <i>W ar Shell</i>)	U. S. S. B.	Navy	3,000	....	Redelivered
LAKE SILVER	U. S. S. B.	Navy	3,305	....	Redelivered
LAKE ST. CLAIR	U. S. S. B.	Navy	3,270	....	Assigned to Food Adminis- tration at Rotterdam
LAKE ST. REGIS	U. S. S. B.	Navy	3,270	....	Assigned to Food Adminis- tration at Rotterdam
LAKE SUNAPEE	U. S. S. B.	Navy	2,922	....	Redelivered
LAKE TRAVERSE	U. S. S. B.	Navy	2,920	....	Assigned to Food Adminis- tration
LAKE TULARE	U. S. S. B.	Navy	2,875	....	Assigned to Food Adminis- tration at Rotterdam
LAKE WESTON	U. S. S. B.	Navy	2,875	....	Sunk
LAKE WIMICO	U. S. S. B.	Navy	2,875	....	Assigned to Food Adminis- tration at Rotterdam
LAKE WINOOSKI	U. S. S. B.	Navy	3,500	....	Redelivered
LAKE YAHARA	U. S. S. B.	Navy	3,525	....	Redelivered
LAKE YELVERTON	U. S. S. B.	Owners	3,525	....	Redelivered
LAKE YPSILANTI	U. S. S. B.	Navy	3,525	....	Redelivered
LEVISA	United Fruit Co.	Navy	3,190	....	Redelivered
LEWIS K. THURLOW	Crowell & Thurlow Steamship Co.	Navy	5,100	....	Redelivered
MACONA	Barber & Co.	Navy	5,850	....	Redelivered

LIST OF AMERICAN TRANSPORTS IN THE WORLD WAR (Continued)

Name	Owners	Operated and		Troops	Disposition
		Manned by	Total Speed, knots D. W. per hour		
MARIANA	N. Y. & Porto Rico Steamship Co.	Navy	4,700 10	....	Redelivered
MAUBAN	Tabacalero Steam- ship Co.	Navy	2,000 ..	....	Redelivered
MCCLELLAN	U. S. Government	Navy	4,000 ..	....	Sold to French Government
MOLDEGAARD	A. H. Bull Steam- ship Co.	Navy	4,530 9	....	Turned back to Navy
SANTIAGO	N. Y. & Cuba Mail Steamship Co.	Navy	5,360 11	....	Redelivered
WM. O'BRIEN	Huron Navigation Co.	Army	7,438 9	....	Redelivered
VESSELS FORMERLY NAVY ACCOUNT LOANED TO ARMY FOR CROSS-CHANNEL COAL TRADE					
ASTORIA	U. S. S. B.	Navy	4,650 ..	....	Released
(Ex-Frieda Leonhardt)					
BEAUFORT	Navy	Navy	2,600 10	50 E. M.	Released
(Ex-Rudolph Blumburg)					
LONG BEACH	Navy	Navy	4,461 9	....	Released
(Ex-Hohenfelda)					
NERO	Navy	Navy	3,800 9	....	Released

APPENDIX G

UNITED STATES TROOP CONVOYS IN THE WORLD WAR

(Vessels whose names are followed by abbreviation N.N. sailed from Newport News. All others sailed from New York except as indicated. Group numbers preceded by letters HX indicate that vessels of group joined British fast-liner convoy from Halifax, N. S.)

Group	Sailed	Escort	Transports	Group	Sailed	Escort	Transports
1.	June 14, 1917	Seattle	Tenadores Pastores Saratoga Havana De Kalb Morus Antilles Lenape Henderson Mallory Finland San Jacinto Dakotan Montanan Edward Luckenbach El Occidente Hancock	7.	Sept. 8, 1917	Huntington	San Jacinto Henderson De Kalb Huron Pocahontas Mallory Pastores Tenadores Henderson Antilles Finland Lenape (Antilles sunk on return; Lenape returned, engine trouble; Finland sailed for U. S. October 27, 1917, and was torpedoed. Sailed again Jan. 5, 1918.)
2.	June 14, 1917	Birmingham		8.	Sept. 24, 1917	San Diego	De Kalb President Lincoln Covington Pastores Tenadores
3.	June 14, 1917	Charleston		9.	Oct. 19, 1917	Seattle	
4.	June 17, 1917	St. Louis					
5.	July 31, 1917	North Carolina	Pastores Tenadores Mallory Saratoga Finland Antilles				
6.	Aug. 6, 1917	Montana					

UNITED STATES TROOP CONVOYS IN THE WORLD WAR (Continued)

Group	Sailed	Escort	Transports	Arrived in France	Returned to United States
10.	Oct. 19, 1917	North Carolina	Agamemnon Mt. Vernon Von Steuben America	.....	.....
11.	Nov. 12, 1917	San Diego	Pocahontas Powhatan Madawaska (Pocahontas returned.) Æolus Calamares Tenadores Mallory San Jacinto Julia Luckenbach Huron George Washington De Kalb Covington President Lincoln Antigone	Nov. 26, 1917	Mar. 2, 1918
12.	Nov. 26, 1917	Charleston	.....	.....	.....
13.	Dec. 4, 1917	Montana Jouett	.....	.....	.....
14.	Dec. 14, 1917	North Carolina	.....	Dec. 28, 1917 Dec. 30, 1917	Jan. 21, 1918 Jan. 30, 1918
Sp.	Dec. 15, 1917	Unescorted	Susquehanna Pocahontas	Dec. 30, 1917 Dec. 25, 1917	Jan. 29, 1918 Feb. 11, 1918
15.	Dec. 26, 1917	Rochester	Leviathan President Grant Pastores America Mercury	Jan. 8, 1918 Jan. 18, 1918 Jan. 18, 1918	Feb. 19, 1918 Feb. 7, 1918 Feb. 4, 1918 Feb. 6, 1918 Feb. 16, 1918
16.	Jan. 4, 1918	Seattle	.....	.....	.....

UNITED STATES TROOP CONVOYS IN THE WORLD WAR (Continued)

Group	Sailed	Escort	Transports	Arrived in France	Returned to United States
17.	Jan. 12, 1918	Montana	Mt. Vernon Madawaska Agamemnon (Agamemnon left Jan. 13, 1918, at 9:00 P.M. to over- take group.)	Jan. 25, 1918 Jan. 25, 1918 Jan. 25, 1918	Feb. 11, 1918 Feb. 12, 1918 Feb. 11, 1918
18.	Jan. 24, 1918	North Carolina	Huron Tenadores Mallory Henderson Æolus Calamares Wilhelmina Finland	Feb. 5, 1918 Feb. 5, 1918 Feb. 5, 1918 Feb. 5, 1918 Feb. 15, 1918 Feb. 15, 1918 Feb. 15, 1918	Feb. 27, 1918 Feb. 23, 1918 Feb. 28, 1918 Mar. 1, 1918 Mar. 1, 1918 Mar. 1, 1918
19.	Jan. 31, 1918	Frederick	Antigone Martha Washington President Lincoln Von Stenben	Feb. 24, 1918 Feb. 24, 1918 Feb. 24, 1918 Feb. 24, 1918	Mar. 16, 1918 Mar. 13, 1918 Mar. 14, 1918 Mar. 16, 1918
20.	Feb. 10, 1918	Pueblo	Covington De Kalb Et Sol Manchuria Pastores	Mar. 4, 1918 Mar. 4, 1918 Mar. 4, 1918 Mar. 4, 1918 Mar. 4, 1918	Mar. 22, 1918 Mar. 22, 1918
21.	Feb. 18, 1918	Huntington	George Washington President Grant Susquehanna Agamemnon	Mar. 4, 1918 Mar. 4, 1918 Mar. 4, 1918 Mar. 10, 1918	Mar. 23, 1918 Mar. 23, 1918 Mar. 29, 1918 Mar. 26, 1918 Mar. 21, 1918
22.	Feb. 27, 1918	Seattle			

UNITED STATES TROOP CONVOYS IN THE WORLD WAR (Continued)

Group	Sailed	Escort	Transports	Arrived in France	Returned to United States
			<i>America</i>		
Sp.	Mar. 4, 1918	Unescorted	<i>Mt. Vernon</i>	Mar. 10, 1918	Mar. 27, 1918
23.	Mar. 7, 1918	<i>North Carolina</i>	<i>Leviathan</i>	Mar. 12, 1918	Mar. 21, 1918
			<i>Madawaska</i>	Mar. 20, 1918	Apr. 17, 1918
			<i>Mongolia</i>	Mar. 20, 1918	Apr. 10, 1918
			<i>Mercury</i>	Mar. 20, 1918	
			<i>Tenadores</i>	Mar. 20, 1918	Apr. 13, 1918
Sp.	Mar. 12, 1918	Unescorted	<i>Great Northern</i>	Mar. 20, 1918	Apr. 12, 1918
24.	Mar. 14, 1918	<i>Rochester</i>	<i>Matsonia</i>	Mar. 20, 1918	Mar. 30, 1918
			<i>Mallory</i>	Mar. 26, 1918	Apr. 17, 1918
			<i>Æolus</i>	Mar. 26, 1918	Apr. 13, 1918
			<i>Henderson</i>	Mar. 26, 1918	Apr. 13, 1918
			<i>Pocahontas</i>	Mar. 26, 1918	Apr. 9, 1918
25.	Mar. 23, 1918	<i>Pueblo</i>	<i>Powhatan</i>	Mar. 26, 1918	Apr. 14, 1918
			<i>El Occidente</i>	Apr. 4, 1918	Apr. 22, 1918
			<i>Finland</i>	Apr. 4, 1918	
			<i>Martha Washington</i>	Apr. 4, 1918	Apr. 24, 1918
Sp.	Mar. 30, 1918	Unescorted	<i>Northern Pacific</i>	Apr. 7, 1918	Apr. 22, 1918
			<i>Mt. Vernon</i>	Apr. 7, 1918	Apr. 19, 1918
			<i>Von Steuben</i>	Apr. 7, 1918	Apr. 16, 1918
			<i>President Lincoln</i>	Apr. 7, 1918	Apr. 20, 1918
26.	Mar. 30, 1918	<i>Frederick</i>	<i>Antigone</i>	Apr. 13, 1918	May 1, 1918
			<i>George Washington</i>	Apr. 13, 1918	May 1, 1918
			<i>Kursk</i>	Apr. 13, 1918	Apr. 27, 1918
			<i>De Kalb N.N.</i>	Apr. 13, 1918	May 2, 1918
			<i>Susquehanna N.N.</i>	Apr. 13, 1918	May 1, 1918
			<i>Pastores N.N.</i>	Apr. 13, 1918	May 3, 1918
				Apr. 13, 1918	Apr. 30, 1918

UNITED STATES TROOP CONVOYS IN THE WORLD WAR (Continued)

Group	Sailed	Escort	Transports	Arrived in France	Returned to United States
27.	Apr. 6, 1918	Unescorted	Great Northern N.N. America Agamemnon (Agamemnon sailed Apr. 7, 1918, to overtake group.) Covington Huron President Grant N.N. (Huron returned to Ho- boken 12:30; engine trou- ble. President Grant grounded at Newport News 4:30 P.M., Apr. 7. Floated clear 7:50 A.M., Apr. 8.) Maui	Apr. 15, 1918 Apr. 15, 1918 Apr. 15, 1918 Apr. 22, 1918 Apr. 23, 1918	Apr. 26, 1918 May 1, 1918 Apr. 28, 1918 May 5, 1918 May 7, 1918
28.	Apr. 10, 1918	Huntington			
29.	Apr. 16, 1918	Seattle	Calamaries Pocahontas Czar Czaritza El Oriente Madawaska N.N. Mt. Vernon (Mt. Vernon sailed from Hoboken 2:15 P.M. Apr. 19 to join this group. Maui delayed by engine	Apr. 28, 1918 Apr. 28, 1918 Apr. 28, 1918 Apr. 28, 1918 Apr. 28, 1918 Apr. 28, 1918 Apr. 28, 1918	May 11, 1918 May 8, 1918 May 19, 1918 May 12, 1918 May 6, 1918

UNITED STATES TROOP CONVOYS IN THE WORLD WAR (Continued)

Group	Sailed	Escort	Transports	Arrived in France	Returned to United States
30.	Apr. 23, 1918	North Carolina	<p>trouble on other side. Repairs to be completed by May 15. <i>Mauit</i> sailed for United States May 15, 1918.)</p> <p><i>Tenadores</i> <i>Mercury</i> <i>Mallory</i> <i>Henderson</i> <i>Siboney</i> N.N. <i>Æolus</i> <i>Huron</i> (<i>Huron</i> and <i>Æolus</i> in collision Apr. 25; returned Hoboken Apr. 28, 1918.)</p>	<p>May 6, 1918 May 6, 1918 May 6, 1918 May 6, 1918 May 6, 1918</p>	<p>May 23, 1918 May 18, 1918 May 22, 1918 May 22, 1918 May 15, 1918</p>
Sp.	Apr. 24, 1918	Unescorted		May 2, 1918	May 12, 1918
31.	Apr. 26, 1918	Unescorted	<i>Von Steuben</i> <i>Northern Pacific</i>	May 4, 1918 May 4, 1918	May 15, 1918 May 15, 1918
32.	Apr. 30, 1918	South Dakota	<i>Martha Washington</i> N.N. <i>Finland</i> <i>Matsonia</i> <i>Manchuria</i> <i>Kroonland</i> <i>Powhatan</i> N.N. <i>Great Northern</i> <i>America</i> <i>George Washington</i>	<p>May 12, 1918 May 12, 1918 May 12, 1918 May 12, 1918 May 12, 1918 May 12, 1918 May 10, 1918 May 18, 1918 May 18, 1918</p>	<p>June 1, 1918 May 30, 1918 May 31, 1918 May 30, 1918 June 1, 1918 June 1, 1918 May 18, 1918 May 29, 1918 May 29, 1918</p>
33.	May 2, 1918	Unescorted		May 10, 1918	May 18, 1918
34.	May 8, 1918	De Kalb		May 18, 1918	May 29, 1918

UNITED STATES TROOP CONVOYS IN THE WORLD WAR (Continued)

Group	Sailed	Escort	Transports	Arrived in France	Returned to United States
Sp.	May 22, 1918 7.00 P.M.	Unescorted	<i>Bridge</i> <i>Leviathan</i>	May 30, 1918 May 30, 1918	June 8, 1918
38.	May 23, 1918 4.00 A.M.	Unescorted	<i>Great Northern</i> <i>Northern Pacific</i>	May 30, 1918 May 30, 1918	June 12, 1918 June 12, 1918
39.	May 27, 1918 11.00 A.M.	<i>Von Steuben</i> <i>Sigourney</i> <i>North Carolina</i>	<i>Mallory N.N.</i> <i>Henderson</i> <i>Ulua</i> <i>Siboney</i> <i>Huron</i> <i>Mongolia</i> <i>Tenadores</i> <i>Mercury</i> <i>America</i> <i>Æolus N.N.</i>	June 8, 1918 June 8, 1918 June 8, 1918 June 8, 1918 June 8, 1918 June 8, 1918 June 8, 1918 June 8, 1918 June 8, 1918 June 8, 1918 June 18, 1918	June 23, 1918 June 25, 1918 June 25, 1918 June 22, 1918 June 24, 1918 June 21, 1918 June 24, 1918 June 24, 1918 June 24, 1918 June 21, 1918 July 3, 1918
40.	June 7, 1918 11.00 A.M.	<i>Seattle</i> <i>Stevens</i> <i>Frederick</i>	<i>Manchuria</i> <i>Powhatan N.N.</i> <i>Martha Washington N.N.</i> <i>Czaritza N.N.</i> <i>Matsonia N.N.</i> <i>America</i> <i>Mt. Vernon</i> <i>Agamemnon</i> <i>Orizaba</i>	June 18, 1918 June 18, 1918 June 18, 1918 June 18, 1918 June 18, 1918 June 19, 1918 June 19, 1918 June 19, 1918 June 19, 1918	July 3, 1918 July 3, 1918 July 3, 1918 June 30, 1918 July 2, 1918 July 1, 1918 June 30, 1918 June 30, 1918 July 1, 1918
41.	June 10, 1918 11.00 P.M.	Unescorted	<i>Plattsburg</i> <i>De Kalb</i> <i>Finland</i>	June 24, 1918 June 27, 1918 June 27, 1918	July 11, 1918 July 11, 1918 July 13, 1918
HX37.	June 12, 1918	<i>San Diego</i>			
42.	June 15, 1918 4.00 P.M.	<i>North Carolina</i> <i>Stevens</i>			

UNITED STATES TROOP CONVOYS IN THE WORLD WAR (Continued)

Group	Sailed	Escort	Transports	Arrived in France	Returned to United States
		<i>Frederick</i> <i>Fairfax</i>	<i>Covington</i> <i>Kroonland</i> <i>George Washington</i> <i>Rijndam</i> <i>Dante Alighieri</i> <i>Vauban</i> <i>Wilhelmina</i> N.N. <i>Lenape</i> N.N. <i>Princess Matoika</i> N.N. <i>Pastores</i> N.N. <i>Czar</i> N.N. (<i>Covington</i> sunk, July 1, 1918.) <i>Leviathan</i>	June 27, 1918 June 27, 1918 June 27, 1918 June 27, 1918 June 27, 1918 June 27, 1918 June 27, 1918 June 27, 1918 June 27, 1918 June 27, 1918 June 27, 1918	Sunk July 13, 1918 July 10, 1918 July 12, 1918 July 12, 1918 July 13, 1918 July 12, 1918 July 13, 1918 July 11, 1918
43.	June 15, 1918 1.00 P.M.	Unescorted		June 22, 1918	July 1, 1918
44.	June 19, 1918 5.00 P.M.	Unescorted	<i>Great Northern</i> <i>Northern Pacific</i> <i>Harrisburg</i> <i>Patria</i> N.N.	June 26, 1918 June 26, 1918 July 1, 1918 July 5, 1918	July 3, 1918 July 3, 1918 July 18, 1918 Aug. 5, 1918
HX38.	June 20, 1918	<i>Montana</i>			
45.	June 23, 1918 10.00 A.M.	<i>South Dakota</i> <i>Gregory</i> <i>Huntington</i> <i>Fairfax</i>	<i>Re d'Italia</i> N.N. <i>Pocahontas</i> N.N. <i>Susquehanna</i> N.N. <i>Duc d'Aosta</i> N.N. <i>Caserta</i> N.N. <i>Von Steuben</i> <i>President Grant</i>	July 5, 1918 July 5, 1918 July 5, 1918 July 5, 1918 July 5, 1918 July 9, 1918 July 12, 1918	July 21, 1918 July 19, 1918 July 21, 1918 July 19, 1918 July 21, 1918 July 21, 1918 Aug. 4, 1918
46.	June 30, 1918	<i>Frederick</i> <i>Calhoun</i>			

UNITED STATES TROOP CONVOYS IN THE WORLD WAR (Continued)

Group	Sailed	Escort	Transports	Arrived in France	Returned to United States
		<i>Seattle</i>	<i>Henderson</i>	July 12, 1918	July 30, 1918
		<i>Rathburne</i>	<i>Mongolia</i>	July 12, 1918	July 21, 1918
			<i>Siboney</i>	July 12, 1918	July 26, 1918
			<i>Calamares</i>	July 12, 1918	July 28, 1918
			<i>Duc d'Abruzzi</i>	July 12, 1918	July 28, 1918
			<i>Huron N.N.</i>	July 12, 1918	July 29, 1918
			<i>Madawaska N.N.</i>	July 12, 1918	July 29, 1918
			<i>Mallory</i>	July 12, 1918	July 27, 1918
			<i>Mercury N.N.</i>	July 12, 1918	July 26, 1918
			<i>Tenadores N.N.</i>	July 12, 1918	July 29, 1918
			<i>Zeelandia N.N.</i>	July 12, 1918	July 31, 1918
			<i>Kursk N.N.</i>	July 12, 1918	July 26, 1918
			<i>America</i>		
			(<i>America</i> returned Philadel- phia account fire, July 5, 1918.)		
HX40.	June 6, 1918	<i>Pueblo</i>	<i>Louisville</i>	July 17, 1918	Aug. 4, 1918
47.	July 8, 1918 9:00 P.M.	Unescorted	<i>Leviathan</i>	July 15, 1918	July 25, 1918
48.	July 9, 1918 9:00 P.M.	<i>Dyer</i>	<i>America</i>	July 18, 1918	Aug. 3, 1918
			<i>Mt. Vernon (Boston)</i>	July 18, 1918	July 27, 1918
			<i>Agamemnon</i>	July 18, 1918	July 27, 1918
			<i>Orizaba</i>	July 18, 1918	July 28, 1918
			<i>La France</i>	July 18, 1918	Aug. 16, 1918
49.	July 10, 1918 11:00 P.M.	<i>Seattle</i>	<i>Manchuria</i>	July 21, 1918	Aug. 5, 1918
		<i>Stringham</i>	<i>Sierra</i>	July 21, 1918	Aug. 10, 1918
		<i>Fairfax</i>	<i>Lutetia</i>	July 21, 1918	Aug. 12, 1918

UNITED STATES TROOP CONVOYS IN THE WORLD WAR (Continued)

Group	Sailed	Escort	Transports	Arrived in France	Returned to United States
		<i>Mayrant</i> <i>Paul Jones</i>	<i>Narragansett</i> <i>Tolosa</i> <i>Æolus</i> N.N. <i>Powhatan</i> N.N. <i>Martha Washington</i> N.N. <i>Matsonia</i> N.N. (<i>Powhatan</i> returned to Morse's Drydock. <i>El Occidente</i> started with group, but returned be- cause of leaky gas in- jector.)	July 21, 1918 July 21, 1918 July 21, 1918 July 21, 1918 July 21, 1918 July 21, 1918	Aug. 5, 1918 Aug. 7, 1918 Aug. 5, 1918 Aug. 5, 1918
50.	July 15, 1918 6.00 P.M.	Unescorted	<i>Great Northern</i> <i>Northern Pacific</i>	July 22, 1918 July 22, 1918	July 31, 1918 July 31, 1918
51.	July 18, 1918 7.00 P.M.	<i>South Dakota</i> <i>Walke</i> <i>Huntington</i> <i>Mayrant</i>	<i>George Washington</i> <i>De Kalb</i> N.N. <i>Rijndam</i> <i>Lenape</i> <i>Antigone</i> <i>Ophir</i> <i>Regina d'Italia</i> <i>Dante Alighieri</i> N.N. <i>Wilhelmina</i> N.N. <i>Princess Matoka</i> N.N. <i>Pastores</i> N.N. <i>Czaritza</i> N.N.	July 30, 1918 July 30, 1918 July 30, 1918 July 30, 1918 July 30, 1918 July 30, 1918 July 30, 1918 July 30, 1918 July 30, 1918 July 30, 1918 July 30, 1918	Aug. 11, 1918 Aug. 13, 1918 Aug. 15, 1918 Aug. 13, 1918 Aug. 13, 1918 Aug. 14, 1918 Aug. 12, 1918 Aug. 15, 1918 Aug. 13, 1918 Aug. 14, 1918 Aug. 15, 1918

UNITED STATES TROOP CONVOYS IN THE WORLD WAR (Continued)

Group	Sailed	Escort	Transports	Arrived in France	Returned to United States
HX42.	July 22, 1918	<i>Frederick</i>	<i>Harrisburg</i>	Aug. 3, 1918	Aug. 20, 1918
52.	July 26, 1918 5.00 P.M.	<i>Huntington</i>	<i>Plattsburg</i>	Aug. 3, 1918	Aug. 20, 1918
		<i>Rathburne</i>	<i>Finland</i>	Aug. 7, 1918	Aug. 25, 1918
		<i>Pueblo</i>	<i>Kroonland</i>	Aug. 7, 1918	Aug. 19, 1918
		<i>Cathoun</i>	<i>Taormina</i>	Aug. 7, 1918	Aug. 20, 1918
53.	July 31, 1918 7.00 P.M.	<i>Charleston</i>	<i>Pocahontas N.N.</i>	Aug. 7, 1918	Aug. 18, 1918
		<i>Preble</i>	<i>Susquehanna N.N.</i>	Aug. 7, 1918	Aug. 19, 1918
		<i>Calhoun</i>	<i>Duc d'Aosta N.N.</i>	Aug. 7, 1918	Aug. 18, 1918
		<i>Seattle</i>	<i>Caserta N.N.</i>	Aug. 7, 1918	
		<i>Paul Jones</i>	<i>Maui</i>	Aug. 12, 1918	Aug. 26, 1918
			<i>Siboney</i>	Aug. 12, 1918	Aug. 22, 1918
			<i>Calamares</i>	Aug. 12, 1918	Aug. 24, 1918
54.	Aug. 3, 1918 7.00 P.M.	<i>Fairfax</i>	<i>Mallory</i>	Aug. 12, 1918	Aug. 24, 1918
			<i>Orizaba</i>	Aug. 12, 1918	Aug. 24, 1918
			<i>Tenadores N.N.</i>	Aug. 12, 1918	Aug. 28, 1918
			<i>Re d'Italia N.N.</i>	Aug. 12, 1918	Aug. 24, 1918
			<i>Leviathan</i>	Aug. 11, 1918	Aug. 20, 1918
			<i>Great Northern</i>	Aug. 11, 1918	Aug. 20, 1918
55.	Aug. 3, 1918 7.00 P.M.	<i>Pueblo</i>	<i>Northern Pacific</i>	Aug. 11, 1918	Aug. 20, 1918
		<i>Fairfax</i>	<i>Mongolia N.N.</i>	Aug. 18, 1918	Sept. 2, 1918
		<i>South Dakota</i>	<i>Madawaska N.N.</i>	Aug. 18, 1918	Sept. 1, 1918
		<i>Hull</i>	<i>Huron N.N.</i>	Aug. 18, 1918	Sept. 1, 1918
			<i>Zealandia N.N.</i>	Aug. 18, 1918	Sept. 6, 1918
HX44.	Aug. 8, 1918	<i>Rochester</i>	<i>Kursk N.N.</i> <i>Duc d'Abruzzi N.N.</i> <i>Louisville</i>	Aug. 18, 1918	Sept. 2, 1918

UNITED STATES TROOP CONVOYS IN THE WORLD WAR (Continued)

Group	Sailed	Escort	Transports	Arrived in France	Returned to United States
56.	Aug. 14, 1918 3:00 P.M.	<i>Seattle</i> <i>Frederick</i>	<i>Manchuria</i> <i>Manchuria</i> N.N. <i>Henderson</i> N.N. <i>Martha Washington</i> N.N. <i>Æolus</i> N.N. <i>Patria</i> N.N. <i>Konig der Nederlanden</i> N.N. (<i>Manchuria</i> lost propeller and returned New York.) <i>Von Steuben</i> <i>America</i> <i>George Washington</i> <i>De Kalb</i> <i>Rijndam</i> <i>Lenape</i> <i>President Grant</i> <i>Wilhelmina</i> <i>Sobral</i> <i>Princess Matoika</i> N.N. <i>Pastores</i> N.N. <i>Czariza</i> N.N. <i>Antigone</i> N.N. <i>Dante Alighieri</i> N.N. <i>Lutetia</i> N.N. <i>Agamemnon</i> <i>Mt. Vernon</i>	Aug. 25, 1918 Aug. 25, 1918	Sept. 9, 1918 Aug. 17, 1918
57.	Aug. 18, 1918 6:00 P.M.	<i>Walke</i>		Aug. 27, 1918 Aug. 27, 1918 Aug. 27, 1918 Sept. 3, 1918 Sept. 3, 1918 Sept. 3, 1918 Sept. 3, 1918 Sept. 3, 1918 Sept. 3, 1918	Sept. 7, 1918 Sept. 7, 1918 Sept. 8, 1918 Sept. 17, 1918 Sept. 17, 1918 Sept. 17, 1918 Sept. 17, 1918 Sept. 17, 1918 Sept. 17, 1918
58.	Aug. 22, 1918 3:00 P.M.	<i>North Carolina</i> <i>Taylor</i> <i>Huntington</i> <i>Fairfax</i>			
59.	Aug. 26, 1918 4:00 P.M.	<i>Walke</i>		Sept. 3, 1918 Sept. 3, 1918 Sept. 3, 1918 Sept. 3, 1918 Sept. 3, 1918 Sept. 3, 1918 Sept. 3, 1918	Sept. 17, 1918 Sept. 16, 1918 Sept. 26, 1918 Sept. 17, 1918 Sept. 17, 1918 Sept. 26, 1918 Sept. 11, 1918

UNITED STATES TROOP CONVOYS IN THE WORLD WAR (Continued)

Group	Sailed	Escort	Transports	Arrived in France	Returned to United States
60.	Aug. 30, 1918 6.00 P.M.	<i>Frederick Calhoun</i>	<i>La France</i> (<i>Mt. Vernon</i> torpedoed Sept. 5, 1918; returned to France; to Boston, Oct. 28, 1918.) <i>Susquehanna Kroonland Harrisburg Plattsburg Duc d'Aosta N.N. America N.N. Tenadores N.N. Caserta N.N. Leviathan</i>	Sept. 3, 1918	Sept. 17, 1918
61.	Aug. 31, 1918 5.00 P.M.	<i>Murray Stribling</i>	<i>Great Northern Northern Pacific Siboney Orizaba Maui</i>	Sept. 12, 1918 Sept. 12, 1918 Sept. 12, 1918 Sept. 12, 1918 Sept. 12, 1918 Sept. 12, 1918 Sept. 12, 1918 Sept. 12, 1918 Sept. 7, 1918 Sept. 7, 1918	Sept. 29, 1918 Sept. 27, 1918 Oct. 2, 1918 Oct. 2, 1918 Sept. 27, 1918 Sept. 27, 1918 Sept. 27, 1918 Sept. 27, 1918 Sept. 19, 1918 Sept. 19, 1918
62.	Sept. 4, 1918 7.00 P.M.	<i>Fairfax</i>	<i>Northern Pacific Siboney Orizaba Maui</i>	Sept. 7, 1918 Sept. 13, 1918 Sept. 13, 1918 Sept. 13, 1918	Sept. 19, 1918 Sept. 29, 1918 Sept. 29, 1918 Sept. 29, 1918
63.	Sept. 8, 1918 12.00 M.	<i>Huntington Walke Rochester Taylor</i>	<i>Manchuria Mallory Mercury Desna Re d'Italia N.N. Huron N.N. Zealandia N.N.</i>	Sept. 21, 1918 Sept. 21, 1918 Sept. 21, 1918 Sept. 21, 1918 Sept. 21, 1918 Sept. 21, 1918 Sept. 21, 1918	Oct. 4, 1918 Oct. 3, 1918 Oct. 3, 1918 Oct. 5, 1918 Oct. 18, 1918 Oct. 4, 1918 Oct. 5, 1918

UNITED STATES TROOP CONVOYS IN THE WORLD WAR (Continued)

Group	Sailed	Escort	Transports	Arrived in France	Returned to United States
68.	Sept. 26, 1918 5.00 P.M.	Unescorted	Northern Pacific Great Northern La France Leviathan	Oct. 4, 1918 Oct. 4, 1918 Oct. 4, 1918 Oct. 7, 1918	Oct. 13, 1918 Oct. 24, 1918 Nov. 6, 1918 Oct. 16, 1918
69.	Sept. 29, 1918 5.00 P.M.	Murray	George Washington De Kalb	Oct. 14, 1918 Oct. 14, 1918	Oct. 25, 1918 Oct. 26, 1918
70.	Sept. 30, 1918 6.00 P.M.	South Dakota Michigan Bell Fairfax	Caronia Armagh Ulysses	Oct. 14, 1918 Oct. 14, 1918 Oct. 14, 1918	Oct. 25, 1918 Oct. 26, 1918
71.	Oct. 6, 1918	Unescorted	Dante Alighieri N.N. Czaritza N.N. Orizaba Siboney Lutetia N.N. Kroonland Euriptides	Oct. 14, 1918 Oct. 14, 1918 Oct. 15, 1918 Oct. 15, 1918 Oct. 15, 1918 Oct. 20, 1918 Oct. 20, 1918	Nov. 7, 1918 Nov. 10, 1918 Oct. 25, 1918 Oct. 24, 1918 Withdrawn Nov. 3, 1918 Nov. 9, 1918 Nov. 9, 1918
72.	Oct. 7, 1918 8.00 P.M.	Seattle Murray Rochester Fairfax	Caserta Susquehanna N.N. Tenadores N.N. America N.N. Czar N.N.	Oct. 20, 1918 Oct. 20, 1918 Oct. 20, 1918 Oct. 20, 1918 Oct. 20, 1918	Nov. 4, 1918 Nov. 3, 1918 Withdrawn
73.	Oct. 11, 1918 6.00 P.M.	Lea	Harrisburg Plattsburg Maui	Oct. 20, 1918 Oct. 21, 1918 Oct. 21, 1918	Nov. 14, 1918 Nov. 13, 1918 Nov. 8, 1918
74.	Oct. 14, 1918 5.00 P.M.	Virginia Huntington	Mallory Duc d'Abruzzi	Oct. 21, 1918 Oct. 21, 1918 Oct. 26, 1918 Oct. 26, 1918	Nov. 8, 1918 Nov. 8, 1918 Nov. 8, 1918 Nov. 8, 1918

UNITED STATES TROOP CONVOYS IN THE WORLD WAR (Continued)

Group	Sailed	Escort	Transports	Arrived in France	Returned to United States
		<i>Pueblo</i>	<i>Re d'Italia</i> N.N. <i>Huron</i> N.N. <i>Madawaska</i> N.N. <i>Zeelandia</i> N.N.	Oct. 26, 1918 Oct. 26, 1918 Oct. 26, 1918 Oct. 26, 1918	Withdrawn Nov. 9, 1918 Nov. 9, 1918 Nov. 9, 1918
75.	Oct. 16, 1918 7:00 P.M.	<i>Perkins</i> <i>Rathburne</i>	<i>Von Steuben</i> <i>Agamemnon</i> <i>Northern Pacific</i> <i>Pocahontas</i>	Oct. 25, 1918 Oct. 25, 1918 Oct. 25, 1918 Oct. 25, 1918	Nov. 8, 1918 Nov. 5, 1918 Nov. 5, 1918 Nov. 20, 1918
76.	Oct. 21, 1918 12:30 P.M.	<i>New Hampshire</i> <i>Charleston</i> <i>Talbot</i> <i>South Dakota</i> <i>Radford</i> Unescorted	<i>Sobral</i> <i>Martha Washington</i> N.N. <i>Æolus</i> N.N. <i>Duc d'Aosta</i> N.N. <i>Leviathan</i>	Nov. 4, 1918 Nov. 4, 1918 Nov. 4, 1918 Nov. 4, 1918 Nov. 4, 1918 Nov. 3, 1918	Withdrawn Nov. 16, 1918 Nov. 17, 1918 Nov. 17, 1918 Nov. 17, 1918 Dec. 16, 1918
77.	Oct. 27, 1918 2:00 P.M.	<i>Louisiana</i> <i>Seattle</i>	<i>Henderson</i> <i>Kursk</i> <i>Rijndam</i> <i>President Grant</i> <i>Wilhelmina</i> <i>Princess Matoika</i> <i>Mongolia</i> <i>Pastores</i> N.N. <i>Antigone</i> N.N. <i>Konig der Nederlanden</i> N.N. <i>El Sol</i> N.N. <i>Powhatan</i> N.N.	Nov. 9, 1918 Nov. 9, 1918 Nov. 9, 1918 Nov. 9, 1918 Nov. 9, 1918 Nov. 9, 1918 Nov. 9, 1918 Nov. 9, 1918 Nov. 9, 1918 Nov. 9, 1918 Nov. 9, 1918	Nov. 25, 1918 Nov. 25, 1918 Nov. 22, 1918 Nov. 24, 1918 Nov. 22, 1918 Nov. 22, 1918 Nov. 23, 1918 Nov. 21, 1918 Nov. 21, 1918 Nov. 23, 1918 Nov. 28, 1918 Withdrawn Nov. 23, 1918
78.	Oct. 28, 1918				

UNITED STATES TROOP CONVOYS IN THE WORLD WAR (Continued)

Group	Sailed	Escort	Transports	Arrived in France	Returned to United States
79.	Oct. 31, 1918 6:30 P.M.	<i>Maury</i>	<i>Great Northern</i> <i>George Washington</i>	Nov. 9, 1918 Nov. 9, 1918	Nov. 18, 1918 Nov. 19, 1918
80.	Nov. 4, 1918	<i>Georgia</i>	<i>Lutetia</i> <i>Czaritza</i> <i>Finland</i> <i>Armagh</i> <i>Mercy</i>	Nov. 15, 1918 Nov. 15, 1918 Nov. 15, 1918 Nov. 15, 1918	Withdrawn Nov. 29, 1918 Withdrawn Dec. 7, 1918
81.	Nov. 4, 1918	Unescorted	<i>Orizaba</i> <i>Siboney</i>	Nov. 12, 1918 Nov. 12, 1918	Nov. 24, 1918 Nov. 24, 1918

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[In listing the names of ships, the following abbreviations are used in this index: S. S. for Steamship; U. S. S. for United States Ship; H. M. S. for His Majesty's Ship; U. S. A. T. for United States Army Transport (owned by the Government); and U. S. A. C. T. for United States Army Chartered Transport.]

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